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SITUATION CLIMATIC BRIEFS

BY

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AIR WEATHER SERVICE (MAC)
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ENVIRONMENTAL
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FOR THE COMMANDER



DR. PATRICK J. BREITLING
Chief Scientist

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Situation climatic briefs present narrative climatologies of a country or geographical area by season. They describe weather factors that could signifi- cantly affect military operations. Each Situation Climatic Brief presents a general overview of the climate and descriptions of flying weather, reconnais- sance weather, terminal weather, exposure weather, paratroop weather, and astro- nomical data. Some briefs also contain descriptions of seastate, extreme weather, port conditions, or beach conditions.		

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INTRODUCTION

Background

The concept behind the Air Weather Service (AWS) Situation Climatic Brief is not new or revolutionary; in fact, it is simply a very effective means of providing weather information to military commanders. During the past decade the AWS Situation Climatic Brief evolved from a hastily prepared collection of data and words into a tailored, standardized product for use by the Office of the Joint Chiefs of Staff (OJCS) and many other command level agencies via the World Wide Military Command and Control System (WWMCCS). The USAF Environmental Technical Applications Center (USAFETAC) assumed the primary responsibility of preparing the briefs from available climatological data bases.

Detachment 2, Headquarters AWS is the primary Situation Climatic Brief customer inasmuch as it serves as the focal point for field requirement validation, acquisition, and distribution in response to quick response requirements. USAFETAC prepares the Situation Climatic Briefs in response to Detachment 2 requirements. USAFETAC also is responsible for the publication and distribution of the AWS Situation Climatic Briefs to all AWS units.

Rationale for Situation Climatic Briefs

History has shown that battles have been won or lost as commanders either used weather to their advantage or ignored it. Today, the importance of weather in military operations is no less significant. However, the National Command Authorities (NCA), Joint Chiefs of Staff (JCS), and Commanders in Chief (CINCs) are generally far removed from the battlefield, and not so much dependent on day to day weather. Command and control authorities are continually tasked to address complex strategic problems. Their decisions may involve whether or not to engage in a military operation, and if so, where, when, and to what extent. Since top level commanders rarely have the time or capacity to properly assimilate masses of weather data, tailored climatic briefs, serving as intelligence, provide a firm bases upon which the NCA, JCS, and CINCs can plan strategies and, if necessary, make sound decisions during an emergency or crisis. Under such exigencies, climatology may also serve as the primary source of environmental information should "live" weather data be lost or denied. In response to these operating realities, the AWS Situation Climatic Brief emerged.

To be of greatest value, the Situation Climatic Brief must be precisely tailored to customer needs. It must be of sufficient depth and resolution yet structured in such a manner as to facilitate rapid recognition and correct interpretation. The brief should contain as little technical jargon as possible since it is being addressed to nonmeteorologists. If possible, it should be confined to less than two pages (preferably one page) as it is routinely included in OJCS Situation Books. Upon request, the NCA, JCS, and CINCs can have these briefs available either directly from their Staff Weather Officers or by way of the WWMCCS. Wide distribution is encouraged to ensure consistency throughout all command and control echelons.

Structure and Content

The Situation Climatic Brief presents a clear, concise description of weather factors which could significantly affect a military operation. The brief, while not intended to replace a weather forecast or rigorous climatic study, attempts to highlight and assess the relative chance of success or failure of a particular operation based on pertinent weather factors. Although these assessments are subjective, they are based on available climatic data with ample consideration for the variation of weather in space and time.

Situation Climatic Briefs are identified by country or region and climatic season. The brief is composed of sections, short narrative summaries pertaining to a particular operation. The first section is a general overview of the climate. The remaining sections describe various weather factors as they relate to a specific phase or type of operation. Seven standard and three nonstandard sections are available as follows:

Standard Sections.

1. General
2. Flying Weather
3. Reconnaissance Weather
4. Terminal Weather
5. Exposure Weather
6. Paratroop Weather
7. Astronomical Data

Nonstandard Sections.

1. Seastate
2. Extreme Weather
3. Port/Beach Conditions

Standard sections 1, 2, 3, and 6 normally apply to the entire country or region. Sections 4, 5, and 7, however, apply to a specific point such as the capital, a major city, or a representative weather station.

The Situation Climatic Brief format evolved over a decade of support to the OJCS and only became standardized after introduction into WWMCCS in 1978. Initial turmoil required extensive coordination in early 1979 between USAFETAC (producer), OJCS (customer), and AWS Wings (WWMCCS users). This coordination by the DOD Climatological Officer led to a product development for the entire AWS community complementary to the AWS Climatic Brief program. The standardized format and production of a complete annual product by seasons were two significant strides toward development of a continuing AWS Situation Climatic Brief production program similar to the AWS Climatic Brief program.

AWS Situation Climatic Briefs, like AWS Climatic Briefs are filed in this data summary alphabetically by country or geographic areas within a large country. Figure 1 depicts the geographical regions. Eventually there will be eight sections for the geographic regions listed below:

North America (including Greenland and Bermuda)
Latin America (including Mexico, West Indies, and dependent islands)
Europe (including North Atlantic islands)
USSR and Mongolian Peoples Republic
Peoples Republic of China
Asia (Turkey and Cyprus to Indonesia and Japan)
Africa (including Malagasy)
Antarctica, Australia, and Oceania

Questions about AWS Situation Climatic Briefs, their production or use, should be addressed to USAFETAC, Scott AFB, IL 62225.

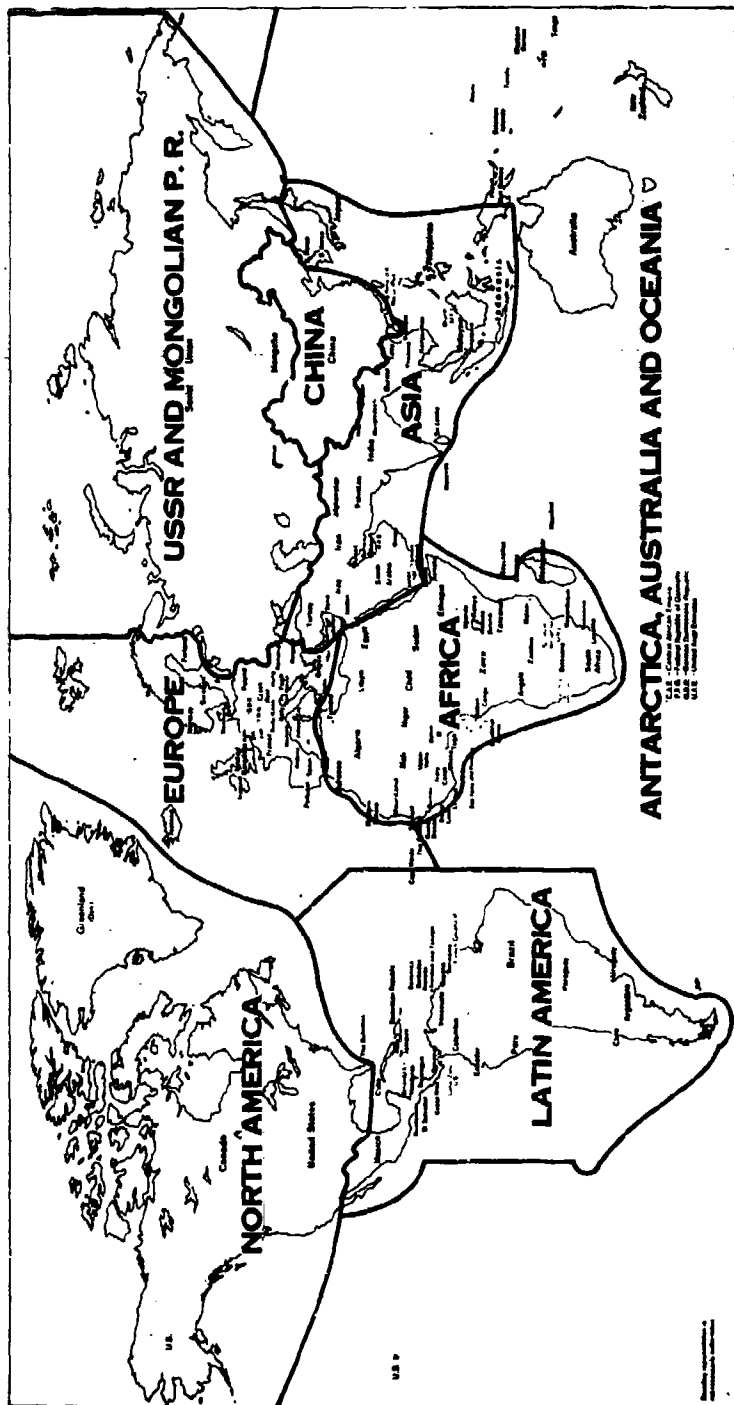


Figure 1. Geographical Regions.

SITUATION CLIMATIC BRIEFS

PART A

AFRICA

SITUATION CLIMATIC BRIEFS - PART A

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* Only season available.

(Prepared: 31 July 1979)

SITUATION CLIMATIC BRIEF

ALGERIA

DECEMBER - FEBRUARY

1. GENERAL. Winters along the Mediterranean coast in Algeria are cool and cloudy with frequent rain. Mild and partly cloudy conditions prevail in the interior. Max-imum temperatures are 55-65F along the seaward mountain slopes and 65-70F in the desert. The corresponding minimum temperatures are 30-45F and 35-50F. Freezing temperatures and snow are common at higher mountain locations. Mean cloudiness is 35-55 percent along the coast and in the Atlas Mountains and 15-30 percent in the desert. The wetter coastal and mountain locations have 8-15 days per month with rain, while the desert has rain 1-3 days per month. Thunderstorms occur once or twice per month in the coastal areas, but are rare in the desert. Winds in excess of 16 knots occur 3-10 days per month at most locations. Some isolated desert locations have them as often as 20 percent of the time. Gale force winds are not common.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-40 percent of the time along the coast and over the Atlas Mountains, and 1-7 percent in the interior. Conditions less than 1500/3 and 500/1 are not common.

3. RECONNAISSANCE WEATHER. Generally fair to poor at coastal locations and good over the desert. Coastal and mountain regions have favorable weather 5-18 days per month; the desert, 17-26 days per month.

4. TERMINAL WEATHER. Algiers, Algeria. Generally good. Algiers has its highest frequency of cloudy and rainy days at this time of the year; however, weather conditions are usually not bad enough to seriously interfere with aircraft operations. Thunderstorms can be expected on about 2 days per month.

5. EXPOSURE WEATHER. Cloudy, cool, and rainy. Locations in the Atlas Mountains can be cold. The desert has chilly nights and mild to warm days.

<u>ALGIERS, ALGERIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	76	76	86
Mean Maximum	60	59	61
Mean Minimum	51	49	49
Absolute Minimum	32	34	34
MEAN PRECIPITATION (INCHES)	5.4	4.4	3.3
MEAN NUMBER OF DAYS			
Precipitation	15	15	12
Thunderstorms	2	2	2

6. PARADROP WEATHER. Unfavorable along the coast 15-30 percent of the time due to precipitation and winds in excess of 13 knots. On the desert, conditions are usually unfavorable 15-40 percent of the time during the afternoon due to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Algiers, Algeria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0623	0630	0610
Last Light	1702	1723	1754

MARCH - MAY

1. GENERAL. Algerian spring weather is partly cloudy with cool mornings. Afternoons are mild to warm during March and become quite hot by May. Morning temperatures along the coast during March are 40-50F, while afternoon temperatures are 60-70F. Mountain locations are cooler. March minimum temperatures in the desert are 50-60F. Maximum temperatures range from the mid 70's to the upper 80's (F). Coastal minimum temperatures in May range from 50-60F and maximums from 70-85F. Lows in the desert during May range from 60-75F and highs from 90-105F. Mean cloudiness along the coast ranges from 35-50 percent, and in the desert from 15-35 percent. Coastal locations receive rain on 8-15 days during May. Most desert locations have 1-2 days with rain. Thunderstorms are expected 1-3 days per month along the coast but are rare over the desert. The chili, a hot, dry, dust-laden south wind that blows ahead of a cold front occurs at this time of year. The Atlas Mountains usually prevent the desert dust from reaching the coast. The frequency of dust storms and sandstorms over the desert increases at this time of year.

2. FLYING WEATHER. Generally good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs at coastal locations 40-55 percent of the time. Some coastal locations have morning fog as often as 10 percent of the time. Ceiling/visibility less than 1500/3 and 500/1 are uncommon. Visibilities over the desert may be reduced by blowing sand and dust.

3. RECONNAISSANCE WEATHER. Fair to good along the coast, and generally good over the desert. Along the coast conditions are favorable 7-15 days per month during the early afternoon. Nighttime hours are the most favorable.

4. TERMINAL WEATHER. Algiers, Algeria. Usually good. Cloudy and rainy conditions occur occasionally in March and April, but become uncommon in May. Morning fog sometimes presents a problem, especially in May. Ceiling/visibility less than 300/1 occurs 1-3 percent of the time. Thunderstorms occur 1-2 days per month in spring.

5. EXPOSURE WEATHER. Partly cloudy to cloudy and cool with occasional rain at coastal locations during March, becoming warm to hot with greatly reduced rainfall by May. The desert is clear to partly cloudy with cool mornings and warm afternoons during March, but can be very hot by May. Afternoons can be quite windy and dusty during May.

<u>ALGIERS, ALGERIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	84	99	101
Mean Maximum	64	68	73
Mean Minimum	52	55	59
Absolute Minimum	37	43	44
MEAN PRECIPITATION (INCHES)	2.9	1.6	1.8
MEAN NUMBER OF DAYS			
Precipitation	13	10	9
Thunderstorms	2	1	2

6. PARADROP WEATHER. Unfavorable 5-10 percent of the time at coastal locations due to precipitation. Desert locations are unfavorable 45-65 percent of the time during the afternoon due to surface winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Algiers, Algeria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0534	0447	0411
Last Light	1820	1847	1915

(Prepared: 31 July 1979)

JUNE - AUGUST

1. GENERAL. The weather is partly cloudy, hot, and dry along the Mediterranean coast and mostly clear, extremely hot, windy, and dusty in the desert interior. Morning minimum temperatures along the coast and seaward slopes of the Atlas Mountains average 60-80F. In the interior, they are 70-85F. Coastal maximum temperatures range from near 80F immediately along the coast to over 100F farther inland. Maximum temperatures in the interior average 100-115F. Skies are clear to partly cloudy 60-80 percent of the time in the coastal regions and 80-95 percent in the desert. Rain falls 1-5 days per month in the coastal regions, but is extremely rare in the interior except in the Ahaggar Mountains where it occurs 2-6 days per month. Thunderstorms follow a similar pattern, occurring 1-5 days per month along the coast, very infrequently over the desert, and 1-3 days per month over the Ahaggar Mountains. Dust storms and sandstorms of varying scope and intensity occur on an almost daily basis over the desert. Winds in excess of 16 knots occur 10-25 percent of the time over the desert and 2-4 percent elsewhere. Gale force winds occur 3-5 percent of the time in the desert, but are rare along the coast.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs as often as 30 percent of the time along the coast, but rarely south of the Atlas Mountains. Ceiling/visibility less than 1500/3 can occur up to 15 percent of the time along the coast. Conditions less than 500/1 are extremely rare everywhere. Visibilities can be reduced by blowing dust and sand over the desert, but are seldom less than 3 miles. Moderate to severe turbulence below 10,000 feet is common due to the strong surface heating.

3. RECONNAISSANCE WEATHER. Good. The number of days with cloud cover 2/8 or less and visibility 2.5 miles or greater varies from 10-15 days at some coastal locations to 20-29 days in the interior. The early morning hours along the coast present the worst conditions.

4. TERMINAL WEATHER. Algiers, Algeria. Generally good. Ceiling/visibility less than 300/1 occurs no more than 2 percent of the time. Morning fog occurs 10-13 percent of the time, but it usually does not seriously restrict the visibility. Thunderstorms occur 1-2 days per month.

5. EXPOSURE WEATHER. Partly cloudy, hot, and uncomfortably humid at coastal locations although rain is infrequent. Locations in the Atlas Mountains are cooler and less humid. The desert regions are extremely hot, dry, windy, and dusty. Nighttime temperatures in the desert can feel quite cool compared to the very high daytime temperatures.

<u>ALGIERS, ALGERIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	101	106	107
Mean Maximum	78	83	85
Mean Minimum	65	70	71
Absolute Minimum	55	62	64
MEAN PRECIPITATION (INCHES)	0.6	0.1	0.2
MEAN NUMBER OF DAYS			
Precipitation	5	1	2
Thunderstorms	2	1	1

6. PARADROP WEATHER. Unfavorable over the desert 60-75 percent of the time during the afternoon due to winds in excess of 13 knots. The coastal regions are the most favorable locations for paradrops; the evening and nighttime hours are the most favorable times.

7. ASTRONOMICAL DATA. Algiers, Algeria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0357	0409	0436
Last Light	1937	1936	1907

(Prepared: 31 July 1979)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn weather in Algeria is characterized by increasing cloudiness and precipitation along the seaward slopes of the Atlas Mountains and falling temperatures throughout the country. November maximum and minimum temperatures are 20-25 Fahrenheit degrees cooler than September temperatures. Mean cloudiness varies from 30-60 percent along the coast to 20-40 percent in the interior. November has the most cloudiness, except on the Ahaggar Mountains in southern Algeria where cloudiness decreases through autumn. September maximum temperatures along the coast of 80-90F decrease to 60-70F in November. Interior maximum temperatures range from 90-105F during September down to 79-90F in November. Minimum temperatures along the coast are 40-65F with the lower values occurring in November. Interior minimum temperatures are 50-80F. Freezing temperatures are fairly common in November, especially at higher elevations. Rainfall occurs 5-15 days per month along the coast and 0-3 days in the desert interior. Thunderstorms occur 1-5 days in the coastal regions, but are quite rare inland except in the Ahaggar Mountains where they occur 1-3 days. Winds in excess of 16 knots occur on 5-20 days over the desert and 2-5 days along the coast. Gale force winds occur on 1-3 days at isolated desert locations, but are uncommon elsewhere.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs as often as 35 percent of the time on the seaward side of the Atlas Mountains, but very rarely in the desert. Ceiling/visibility less than 1500/3 and 500/1 are uncommon throughout Algeria. Moderate to severe low-level turbulence is common in September, but decreases in frequency as surface temperatures become cooler.

3. RECONNAISSANCE WEATHER. Fair to poor along the Mediterranean coast and good over the interior. Sky cover is 2/8 or less and visibility 2.5 miles or greater on 5-15 days per month along the coast. Nighttime hours are the most favorable.

4. TERMINAL WEATHER. Algiers, Algeria. Good. Cloudiness and precipitation increase at this time of year, but conditions are seldom low enough to hamper flying activities. Thunderstorms occur 2-3 days per month. Conditions less than 300/1 occur 1-2 percent of the time.

5. EXPOSURE WEATHER. Partly cloudy, hot, and humid along the coast in September. Temperatures become much cooler as autumn progresses. Conditions in the interior are hot, dry, and windy in September, but by November warm days, cool nights, and less windy conditions are the rule.

<u>ALGIERS, ALGERIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	103	100	88
Mean Maximum	81	74	66
Mean Minimum	69	63	56
Absolute Minimum	53	46	40
<u>MEAN PRECIPITATION (INCHES)</u>	1.6	3.1	5.1
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	7	10	14
Thunderstorms	3	2	2

6. PARADROP WEATHER. Unfavorable in the desert interior 45-65 percent of the time during the afternoon due to winds in excess of 13 knots. Conditions along the coast are unfavorable 5-10 percent of the time due to rain. Evenings and nighttimes are the most favorable times.

7. ASTRONOMICAL DATA. Algiers, Algeria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0502	0528	0557
Last Light	1821	1737	1707

(Prepared: 14 August 1981)

SITUATION CLIMATIC BRIEF

ANGOLA

NOVEMBER - APRIL

1. GENERAL. The wet season in Angola is cloudy, hot, and humid with abundant rainfall. Nearly continuous rain is accompanied by frequent heavy showers or thunderstorms. Rainfall varies considerably from place to place; it averages 3-5 inches per month along the coast where thunderstorms are rare and 10-14 inches per month in the interior where thunderstorms occur on up to 15 days per month. Mean cloud cover exceeds 70 percent at most locations. Mean daily minimum temperatures range from 45 to 70F. Mean maximum temperatures are 70-90F. Humidity is high; relative humidity averages over 80 percent in the morning and 60-75 percent in the afternoon. Gale force winds are rare.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-60 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, less than 5 percent of the time. Flying is affected by persistent cloud cover and frequent precipitation and thunderstorms.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 10 days per month or less.

4. TERMINAL WEATHER. Luanda, Angola. Generally good. Cloud cover, though persistent, usually has bases above 300 feet. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. Thunderstorms are uncommon from November through February, but are frequent during March and April.

5. EXPOSURE WEATHER. Warm, wet, and humid. Flash floods commonly occur along the rivers of the northern coastal region. Many rivers in the south flood and spread out over vast flood plains during this season.

<u>LUANDA, ANGOLA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	94	91	93	95	95	97
Mean Maximum	82	83	84	85	85	85
Mean Minimum	73	74	74	75	75	75
Absolute Minimum	66	64	67	61	61	64
<u>MEAN PRECIPITATION (INCHES)</u>	1.0	1.0	1.2	1.5	3.4	4.8
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	2	2	2	3	8	10
Thunderstorms	2	2	2	3	7	9

6. PARADROP WEATHER. Fair to poor. Conditions are favorable 40-80 percent of the time between the hours of 1800-0900Z, but only 15-50 percent between 1000-1700Z.

7. ASTRONOMICAL DATA. Luanda, Angola. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0514	0520	0536	0548	0550	0549
Last Light	1829	1844	1857	1854	1842	1826

(Prepared: 14 August 1981)

MAY - OCTOBER

1. GENERAL. The weather is warm and dry and cloud cover is confined to the coastline. Mean daily maximum temperatures range from 70F to 90F. Mean minimums are 45F to 70F. Up to 2 inches of rain occurs during the months of May and October, otherwise the remainder of the season is dry with less than 0.5 inch per month. Cold coastal waters lead to the formation of off-shore fog and low clouds; hence, mean cloudiness averages 50-90 percent along the coast. Inland, mean cloudiness is near 70 percent during May and October, but only 10-40 percent during the remainder of the season. Gale force winds are rare.

2. FLYING WEATHER. Fair along the coast, good inland. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-70 percent of the time at coastal stations, 10-40 percent inland; less than 1500/3, 10-30 percent at coastal locations, 5-20 percent inland; less than 500/1 rarely occurs.

3. RECONNAISSANCE WEATHER. Fair to poor along the coast, good inland. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 5-15 days per month along the coast, 15-28 days per month inland.

4. TERMINAL WEATHER. Luanda, Angola. Good. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time.

5. EXPOSURE WEATHER. Warm and dry, although humidity remains high at coastal locations. Interior locations often experience flash flooding in early May and late October.

<u>LUANDA, ANGOLA</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	97	90	85	84	86	89
Mean Maximum	83	77	74	74	77	80
Mean Minimum	73	68	64	66	67	71
Absolute Minimum	64	55	55	54	59	64
MEAN PRECIPITATION (INCHES)	0.6	*	*	*	0.1	0.2
MEAN NUMBER OF DAYS						
Precipitation	2	0	0	*	*	1
Thunderstorms	2	0	0	*	*	1

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Fair to good except occasionally fair to poor in May and October. Conditions are favorable 45-90 percent of the time. The least favorable hours are 1200-1800 local time due to winds in excess of 13 knots and/or ceilings less than 1500 feet.

7. ASTRONOMICAL DATA. Luanda, Angola. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0550	0556	0601	0556	0540	0523
Last Light	1817	1818	1825	1828	1825	1823

(Prepared: 23 September 1981)

SITUATION CLIMATIC BRIEF

CHAD

NOVEMBER - APRIL

1. **GENERAL.** Chad is hot and extremely dry in the north; hot and humid in the south. Mean daily temperatures range from minimums in the high 50's to mid 70's (F) to maximums of 90-110F. North of 15N, skies are frequently cloudless. Mean cloud cover varies from up to 25 percent over the northern desert to 50 percent over the more tropical south. In southern Chad heavy rain showers and thunderstorms cause up to 6 inches of precipitation per month. Thunderstorms occur on up to 17 days in the south, but are rare to the north.

2. **FLYING WEATHER.** Generally good. Widespread haze and dust, known as harmattan haze, is fairly common; it can restrict visibilities, both at the surface and aloft, to 0.5-5 miles for 2-5 days. In the south, ceiling/visibility less than 5000 feet and/or 6 miles occurs 55-95 percent of the time; less than 1500/3, 30-40 percent; and less than 500/1, up to 5 percent of the time. To the north, skies are generally cloudless. Thunderstorms occur frequently in the south and are often accompanied by strong winds and torrential rain.

3. **RECONNAISSANCE WEATHER.** Good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 70 percent of the time over northern Chad, 25-60 percent elsewhere. Early morning is the worst time due to tropical cloud cover and early morning fog. The fog usually dissipates soon after sunrise. Harmattan haze occasionally restricts visibilities to less than 3 miles.

4. **TERMINAL WEATHER.** Fort Lamy, Chad. Good. Ceiling/visibility less than 300/1 occurs 5 percent of the time. Haze and dust frequently restrict visibility.

5. **EXPOSURE WEATHER.** Afternoon temperatures are extremely high. Expeditions into the northern desert regions have recorded daytime temperatures as high as 122F and nighttime temperatures as low as 32F. In general, nights are cool over the northern desert and warm and humid over the central and southern regions. Frequent thunderstorms in the south, often with very strong winds and heavy precipitation, result in occasional flash flooding. Sand and dust can make seeing and breathing difficult. In the central and southern regions, high humidity makes conditions even more oppressive.

<u>FORT LAMY, CHAD</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	109	114	113	113	118	117
Mean Maximum	98	94	93	96	103	107
Mean Minimum	63	59	57	60	67	74
Absolute Minimum	52	46	47	50	55	57
MEAN PRECIPITATION (INCHES)	0.4	0	0	0	0	0.2
MEAN NUMBER OF DAYS						
Precipitation	*	0	0	0	0	2
Thunderstorms	0	*	*	0	0	2

* = less than 0.5 day

6. **PARADROP WEATHER.** Fair to poor. Over northern Chad conditions are favorable only 10-50 percent of the time due to frequent winds in excess of 13 knots. Conditions are favorable 55-95 percent of the time over southern and central Chad.

7. ASTRONOMICAL DATA. Fort Lamy, Chad. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0535	0550	0602	0601	0547	0527
Last Light	1754	1801	1817	1829	1832	1834

(Prepared: 23 September 1981)

MAY - OCTOBER

1. GENERAL. Chad can be divided climatically into two regions; a tropical climate south of 15N, and a desert climate north of 15N. The rainy season, lasting throughout the entire period in the south, is confined to the period June through August in the north. Tropical thunderstorms bring torrential rains which cause mean monthly precipitation of up to 17 inches. Although thunderstorms are less frequent in the northern interior, they are typically more severe with wind gusts as high as 65 knots. Temperatures are high in both regions with mean daily maximum temperatures in the low 80's to over 100F. Mean minimums are mostly in the 70's. Mean cloudiness ranges from 15 to 50 percent with extended periods of clear skies in the north.

2. FLYING WEATHER. Good. In the south, ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1 usually occurs with transitory tropical rain squalls. To the north, skies are generally clear except during June-August when an occasional thunderstorm occurs. A dust and sand laden haze, known as harmattan haze, is a common phenomena capable of restricting visibilities to 0.5-5 miles over extensive areas for up to 2-5 days.

3. RECONNAISSANCE WEATHER. Poor south of 15N with improvement northward. The percentage frequency of less than 3/8 cloud cover ranges from 10 percent in the south to 70 percent in the north.

4. TERMINAL WEATHER. Fort Lamy, Chad. Prevailing conditions are good with frequent heavy thunderstorms. Ceiling/visibility less than 300/1 occurs about 1 percent of the time. Haze and/or dust occur 20 percent of the time.

5. EXPOSURE WEATHER. Very hot. Humid and rainy in the south; dry in the north. The harmattan haze is very abrasive and can damage equipment and aircraft attempting to pass through it.

<u>FORT LAMY, CHAD</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	116	113	113	102	107	110
Mean Maximum	104	100	83	88	92	98
Mean Minimum	77	75	73	72	72	71
Absolute Minimum	60	64	62	62	61	57
<u>MEAN PRECIPITATION (INCHES)</u>	2.0	2.9	7.5	7.2	3.9	0.7
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	9	10	14	18	13	7
Thunderstorms	9	10	14	14	13	7

6. PARADROP WEATHER. Conditions are favorable for paradrops 70-95 percent of the time in southern and central Chad but only 15-25 percent of the time during daylight hours in northern Chad. During the warm part of the day (0900-1800L) the restriction is due to winds greater than 13 knots. After sundown the winds diminish and paradrop conditions improve.

7. ASTRONOMICAL DATA. Fort Lamy, Chad. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0513	0512	0519	0526	0528	0528
Last Light	1839	1848	1852	1842	1822	1802

(Prepared: 20 November 1979)

SITUATION CLIMATIC BRIEF

EGYPT

NOVEMBER - FEBRUARY

1. GENERAL. Egypt has a desert climate. Precipitation is negligible except for a narrow belt along the Mediterranean coast where up to 2 inches of precipitation per month occurs. Winter temperatures are cool; afternoon temperatures range from the upper 70's (F) in the southeast to the upper 60's along the Mediterranean coast. Morning lows are in the 40's to low 50's, except in northern interior locales and in the mountains of the Sinai where they drop to the 30's. Visibility is generally good except in dust or sandstorms and over desert pavement where shimmer may reduce horizontal visibility during the day. The dust storms usually last for several hours over wide areas. Fog is normally confined to the Mediterranean coast and the Nile Delta, particularly during the morning. Smoke/haze occur in the densely populated and industrial areas of the Nile Delta. Prevailing surface wind speeds range from 10-15 knots along the Mediterranean coast to 10 knots or less in the interior. Wind speeds of 17 knots or greater occur on as many as 10 days per month at exposed locations along the Mediterranean coast; gale force winds occur on 1-3 days.

2. FLYING WEATHER. Generally good. Skies are usually clear except along the Mediterranean coast where they are cloudy 35-60 percent of the time. Ceilings are rarely below 1000 feet and visibilities are seldom below 3 miles. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 1-40 percent of the time; less than 1500/3, 1-15 percent. The highest incidence of low ceilings/visibilities occurs along the Mediterranean coast during the morning. Thunderstorms occur on 1-2 days per month, but other convective turbulence is a more frequent hazard.

3. RECONNAISSANCE WEATHER. Good over the interior and Red Sea coastal areas. Fair to good over the Mediterranean coast. Sky cover equal to or less than 2/8 and visibility equal to or greater than 3 miles occur on 10-29 days. The least favorable time is during the morning near sunrise when visibility is restricted by smoke and haze.

4. TERMINAL WEATHER. Cairo, Egypt. Fair to partly cloudy skies, mild to warm afternoons, cool nights, and very infrequent precipitation. Ceiling/visibility less than 300/1 occurs about 1 percent of the time.

5. EXPOSURE WEATHER. Cold in the mountains of the Sinai, cool along the Mediterranean coast, hot and dry at interior locations.

CAIRO, EGYPT	NOV	DEC	JAN	FEB
TEMPERATURE (F)				
Absolute Maximum	103	90	86	97
Mean Maximum	80	71	67	71
Mean Minimum	57	49	46	47
Absolute Minimum	41	36	31	37
MEAN PRECIPITATION (INCHES)	0.1	0.2	0.2	0.2
MEAN NUMBER OF DAYS				
Precipitation	*	1	*	*
Thunderstorms	*	*	*	0

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 60-90 percent of the time. The least favorable time is in the afternoon due to turbulent winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Cairo, Egypt. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0554	0616	0626	0611
Last Light	1754	1722	1742	1807

(Prepared: 18 December 1979)

MARCH - OCTOBER

1. GENERAL. Egypt has primarily a desert climate with hot temperatures and negligible rainfall. The exception is a narrow area along the Mediterranean coast where moderate temperatures and meager precipitation occur. The highest incidence of cloudiness (20-50 percent) occurs during spring mornings along the Mediterranean coast. Afternoon temperatures in summer range from the 90's (F) to low 100's at interior and Red Sea coast areas; morning lows vary from 80F in the southeast to the 60's and 70's elsewhere. Early spring and late autumn temperatures are generally 10-20F cooler. Abnormally high temperatures occur in association with the khamsin, an extremely hot, dry, and dust-laden south-to-southeast wind. The khamsin occurs most frequently in spring. Precipitation occurs on 1-3 days per month in early spring and autumn. Fog is normally limited to the Mediterranean coast and Nile Delta. Smoke and haze occur near industrial areas on spring mornings. Surface winds are light, except at interior and Red Sea locations where afternoon wind speeds average 10-15 knots. Gale force winds occur on 1-3 days per month, primarily during the spring.

2. FLYING WEATHER. Good. Turbulent air creates periodic dust and sandstorms. These storms restrict the visibility and cause hazy conditions aloft over wide areas, particularly in summer. Shimmer caused by daytime heating obstructs horizontal visibility, particularly at interior locations. Ceiling/visibility less than 5000 feet and/or 6 miles occur 1-30 percent of the time; less than 1500/3, 1-10 percent. Thunderstorms occur on an average of 2 days or less per month. Thermal turbulence is a hazard encountered at any time of the year, especially over the desert during the afternoon.

3. RECONNAISSANCE WEATHER. Good. The least suitable conditions occur in early spring at northern locations due to morning cloud cover. Unfavorable conditions also occur during the afternoon at interior locations due to blowing sand or dust. The most favorable conditions occur over the desert where clear skies prevail during June through September. Sky cover 2/8 or less and visibility 3 miles or greater occurs on 10-30 days.

4. TERMINAL WEATHER. Cairo, Egypt. Fair to partly cloudy skies, warm to hot temperatures, and infrequent precipitation. Low ceilings and visibilities occur most often during spring mornings, but conditions improve soon after sunrise. Ceiling/visibility less than 300/1 occurs 2 percent of the time in March and less than 1 percent of the time, April through October. Afternoon and early evening crosswinds greater than 15 knots occur 15-27 percent of the time.

5. EXPOSURE WEATHER. Excessively hot at interior locales during the day, nights are warm. Along the sea coasts the heat is less intense, but humidities are uncomfortably high, particularly along the Red Sea coast.

CAIRO, EGYPT

	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
TEMPERATURE (F)				
Absolute Maximum	102	109	115	118
Mean Maximum	76	84	91	96
Mean Minimum	51	56	63	68
Absolute Minimum	37	46	50	58
MEAN PRECIPITATION (INCHES)	0.2	0.1	0.1	0.0
MEAN NUMBER OF DAYS				
Precipitation	1	1	*	0
Thunderstorms	*	0	0	0
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)				
Absolute Maximum	109	106	109	111
Mean Maximum	97	95	91	87
Mean Minimum	71	71	68	64
Absolute Minimum	62	65	58	52
MEAN PRECIPITATION (INCHES)	0.0	0.0	0.0	0.1
MEAN NUMBER OF DAYS				
Precipitation	0	0	0	*
Thunderstorms	*	0	0	*

* = less than 0.5 day

6. PARADROP WEATHER. Suitable 50-95 percent of the time. Unfavorable 50-75 percent of the time during the afternoon due to gusty winds.

7. ASTRONOMICAL DATA. Cairo, Egypt. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0541	0504	0435	0425
Last Light	1826	1846	1907	1925
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0436	0456	0514	0532
Last Light	1924	1901	1825	1748

(Prepared: 22 February 1980)

SITUATION CLIMATIC BRIEF

KENYA

ANNUAL

1. GENERAL. Kenya's weather is cloudy and warm year-round. Temperatures are mild for a country that straddles the Equator. Precipitation is scanty in the northern desert, but the mountains of southwestern Kenya receive 50-80 inches annually. April and May are the wettest months. Mean cloudiness ranges 35-95 percent with little seasonal variation. Ceilings are seldom below 1000 feet except on the mountain tops and ridges and along the windward slopes. Mean daily maximum temperatures are generally in the 70's (F) and 80's except at low elevations in the interior where they are in the 90's. Minimums are between the mid 40's and the mid 60's, but at low elevations they are usually in the low 70's. Winds of 17 knots or greater are frequent along the coast and in the northern desert. Thunderstorm frequencies range from less than four annually in parts of northern and eastern Kenya to more than 200 per year near Lake Victoria. Tropical storms from the Indian Ocean have affected the coast of Kenya, but they are extremely rare.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet occur as often as 85 percent of the time at some locations. In general, lowland locations have their lowest cloud ceilings during the early morning, and mountain locations during the afternoon. Visibility is generally good except during brief periods of heavy showers and in the mountains when clouds obscure the ridges and windward slopes. Ceilings less than 1500 feet are common during the morning in eastern Kenya and at some mountain locations. Ceilings less than 500 feet occur up to 45 percent of the time during the night near Nairobi, but appear to be uncommon elsewhere. The most hazardous conditions occur during April, May, October, and November when the intertropical convergence zone traverses the country.

3. RECONNAISSANCE WEATHER. Generally poor due to extensive cloud cover. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 0-14 days per month.

4. TERMINAL WEATHER. Nairobi Airport, Kenya. Usually poor near sunrise due to low clouds, but fair at other times. Ceilings less than 300 feet occur up to 40 percent of the time in the early morning. Measurable precipitation occurs 3-19 days per month, but thunderstorms are infrequent except during April. Runway crosswinds greater than 15 knots occur 1-7 percent of the time during the afternoon hours.

5. EXPOSURE WEATHER. Cool to mild in the morning and warm in the afternoon. Cloud cover is extensive and persistent. Rain falls frequently at times, but amounts are generally moderate. Most locations in Kenya appear to have a climate comfortable for humans.

<u>NAIROBI, KENYA</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	89	91	90	88	83	86
Mean Maximum	80	83	81	79	76	74
Mean Minimum	57	58	59	60	58	56
Absolute Minimum	43	41	40	42	46	41
<u>MEAN PRECIPITATION (INCHES)</u>	1.4	1.6	4.5	8.3	5.1	1.8
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	4	7	14	19	17	8
Thunderstorms	1	*	2	5	1	*

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	82	96	91	89	88	85
Mean Maximum	72	74	78	80	78	77
Mean Minimum	53	54	54	57	59	58
Absolute Minimum	37	36	38	43	45	43
MEAN PRECIPITATION (INCHES)	0.5	0.8	1.0	2.1	4.5	2.7
MEAN NUMBER OF DAYS						
Precipitation	3	7	4	7	16	10
Thunderstorms	*	1	1	1	*	2

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 25-95 percent of the time. Poor at night due to low clouds during the wettest months (April, May, October, and November). Late afternoon surface winds greater than 13 knots may make conditions poor during the drier months.

7. ASTRONOMICAL DATA. Nairobi, Kenya. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0614	0621	0617	0609	0605	0609
Last Light	1910	1912	1906	1852	1852	1902
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	1614	0613	0604	0553	0550	0559
Last Light	1902	1900	1851	1843	1844	1856

(Prepared: 19 April 1979)

SITUATION CLIMATIC BRIEF

LIBERIA*

MARCH - JUNE

1. GENERAL. The weather is hot and humid with early morning fog, afternoon thunderstorms, and torrential rainfall and is governed largely by the location of the Inter-Tropical Convergence Zone (ITCZ). North of the ITCZ the weather is hot and dry; south of the ITCZ the weather is hot, cloudy, rainy, and humid. During this period the mean position of the ITCZ is over northern Liberia. The daily probability of rainfall throughout Liberia ranges from 40-70 percent. Mean precipitation ranges from approximately 4 inches in March to 36 inches in June. Rainfall is the heaviest in the coastal area. Destructive gale force winds occur in connection with line storms along the ITCZ. These line storms move rapidly from east to west accompanied by heavy thunder, lightning, and squalls of wind that can exceed 50 miles per hour.

2. FLYING WEATHER. Poor due to numerous thunderstorms, heavy cloudiness, and torrential rainfall. The percentage frequency that the ceiling/visibility is less than 5000 feet and/or 5 miles is 40-75 percent; less than 1500/3, 10-20 percent. Cloudiness increases steadily during this period reaching a maximum in June.

3. RECONNAISSANCE WEATHER. Generally poor due to heavy cloudiness. The mean number of days with total sky cover 3/10 or less ranges from 5 days in March and April to 1-2 days in May and June.

4. TERMINAL WEATHER. Monrovia, Liberia. Hot and cloudy with heavy rainfall. The ceiling/visibility is less than 300/1 about 10 percent of the time during March and 5 percent during all other months. The primary visibility restrictions are early morning fog and heavy rain showers. Runway crosswinds greater than 15 knots occur about 1 percent of the time, primarily in the afternoon. Gale force winds occur on occasion and are generally associated with thunderstorms or line storms.

5. EXPOSURE WEATHER. Hot and humid with very heavy rainfall.

<u>MONROVIA, LIBERIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
TEMPERATURE (F)				
Absolute Maximum	96	95	97	94
Mean Maximum	91	90	89	85
Mean Minimum	72	72	72	72
Absolute Minimum	67	68	65	64
MEAN PRECIPITATION (INCHES)	4.4	11.7	13.4	36.1
MEAN NUMBER OF DAYS				
Precipitation	13	14	19	21
Thunderstorms	7	6	5	2

6. PARADROP WEATHER. Favorable 75-95 percent of the time. The primary weather restrictions to paradrop operations are early morning fog and low clouds, afternoon thunderstorms, and rain showers.

7. PORT/BEACH CONDITIONS. The winds are greater than 16 knots 5-10 percent of the time; gale force winds less than 1 percent. Amphibious landing craft and/or small boats may encounter rough seas 1-5 percent of the time.

* Only season available.

8. ASTRONOMICAL DATA. Monrovia, Liberia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0542	0528	0519	0519
Last Light	1829	1825	1827	1834

(Prepared: 17 December 1979)

SITUATION CLIMATIC BRIEF

LIBYA

DECEMBER - MAY

1. GENERAL. Winter and spring in Libya are characterized by cool to warm temperatures and partly cloudy skies. Rainfall is occasional to frequent along the Mediterranean coast and infrequent inland. Libya is frequently affected by migratory weather systems and fronts. Mean daily minimum temperatures during January, the coolest month, range from the upper 30's (F) to the upper 40's. Maximum temperatures are in the 60's. By May maximum temperatures are in the upper 80's along the coast and in the upper 90's and lower 100's inland. Mean cloudiness is 25-65 percent in the coastal regions and 10-40 percent over the inland desert. Thunderstorms occur on 1-3 days per month along the eastern coast, but are rare elsewhere. A phenomenon locally called the ghibli occurs frequently in spring. It is characterized by southeast to southwest winds, very hot temperatures, and reduced visibilities due to airborne dust. The wind during a ghibli is usually light but can occasionally reach gale force.

2. FLYING WEATHER. Generally good. Ceilings less than 5000 feet occur up to 50 percent of the time at exposed coastal locations during January and February but are infrequent elsewhere. Visibility is usually good. However, airborne dust during a ghibli can extend to as high as 10,000 to 15,000 feet. Daytime turbulence over the desert increases in frequency during spring because of the hotter surface temperatures. Severe turbulence may be encountered at low levels when unusually strong convection or surface winds are present.

3. RECONNAISSANCE WEATHER. Good to excellent over the interior desert. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 15-30 days per month. Conditions along the coast are favorable for reconnaissance 5-20 days per month. The western coast is the most favorable location. The nighttime hours are the best time of the day and midafternoon the poorest.

4. TERMINAL WEATHER. Tripoli/Idris Airfield, Libya. Good. Conditions are partly cloudy with occasional rain showers. Fog and low clouds occasionally occur, but ceilings less than 300 feet and/or visibilities less than 1 mile occur on 1 or 2 days per month.

5. EXPOSURE WEATHER. Cool and partly cloudy with occasional rain showers along the coast during the winter months (December-February). As spring advances temperatures become progressively hotter and rain shower activity diminishes.

<u>TRIPOLI/IDRIS AIRFIELD, LIBYA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	85	84	95	113	113	119
Mean Maximum	66	64	67	73	81	87
Mean Minimum	45	43	44	47	52	59
Absolute Minimum	32	25	32	33	35	37
<u>MEAN PRECIPITATION (INCHES)</u>	2.9	2.4	1.8	1.0	0.6	0.2
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	8	8	6	4	2	1
Thunderstorms	1	1	1	1	1	1

6. PARADROP WEATHER. Usually good. Afternoon sea breezes along the coast during spring may interfere with successful paradrops. Conditions are favorable 40-85 percent of the time along the coast and 75-95 percent over the inland desert.

7. ASTRONOMICAL DATA. Tripoli/Wheelus AB, Libya. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0735	0743	0726	0653	0613	0541
Last Light	1829	1850	1919	1939	2002	2026

(Prepared: 14 December 1979)

JUNE - NOVEMBER

1. GENERAL. Summer weather in Libya is extremely hot and nearly cloud free. Rain is almost nonexistent. Autumn is characterized by increasing cloudiness and rain, and decreasing temperatures. Mean cloudiness along the coast during the summer is generally less than 30 percent, but it increases to 30-60 percent during autumn. Over the desert, mean summer cloudiness is less than 10 percent. Mean daily temperatures during July are 85-105F along the coast, and 100-110F over the desert. Overnight lows are in the 60's and 70's (F). Afternoon temperatures along the immediate coast are moderated by a sea breeze. By November maximum temperatures are in the 70's and 80's, and minimum temperatures are in the 40's and 50's. The intense afternoon heating over the desert frequently produces sandstorms of about 25 miles in diameter. These are occasionally accompanied by thunderstorm clouds, and the cloud tops are visible above the approaching sand. The sandstorms are of about 2 hours duration at any one place.

2. FLYING WEATHER. Generally good. Low clouds and fog form along the coast during the early morning and dissipate quickly after sunrise. Ceilings less than 5000 feet occur as often as 30 percent of the time during the morning at exposed coastal locations. Fog restricts the visibility to less than 1 mile up to 7 percent of the time. Visibility is excellent over the desert except for local restrictions during a sandstorm. Low-level turbulence is frequent over the desert and can be severe due to the intense surface heating. This thermal turbulence may extend to as high as 15,000 feet.

3. RECONNAISSANCE WEATHER. Generally excellent except for morning low clouds along the coast, and local sandstorms over the desert; less favorable during autumn as cloud cover increases. The cloud cover is 2/8 or less and the visibility is 3 miles or greater on 20-31 days per month.

4. TERMINAL WEATHER. Tripoli/Idris Airfield, Libya. Good. Morning fog and low clouds may restrict the ceiling to less than 300 feet and/or the visibility to less than 1 mile 2-3 percent of the time during June and July, but are infrequent during subsequent months.

5. EXPOSURE WEATHER. Mostly cloudless and extremely hot during the afternoon, although nighttime temperatures are relatively cool. A sea breeze along the coast moderates the temperatures there. Afternoon sandstorms in the desert are a hazard to both equipment and personnel, but they can be seen approaching from a sufficient distance to take protective measures.

<u>TRIPOLI/IDRIS AIRPORT, LIBYA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)						
Absolute Maximum	121	124	125	121	109	107
Mean Maximum	94	97	97	93	86	76
Mean Minimum	65	66	67	66	61	53
Absolute Minimum	45	54	51	49	44	38
MEAN PRECIPITATION (INCHES)	0.1	*	*	0.4	1.1	1.4
MEAN NUMBER OF DAYS						
Precipitation	*	*	*	1	4	4
Thunderstorms	1	0	*	1	2	1

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Good to excellent except along the immediate coast where an afternoon sea breeze makes conditions unfavorable as often as 70 percent of the time.

7. ASTRONOMICAL DATA. Tripoli/Wheelus AB, Libya. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0529	0541	0603	0625	0646	0711
Last Light	2045	2044	2019	1939	1859	1832

(Prepared: 31 July 1979)

SITUATION CLIMATIC BRIEF

MOROCCO

DECEMBER - FEBRUARY

1. GENERAL. Typical winter weather varies from heavy rainfall in the extreme north and heavy snowfall in the mountains to cool and dry in the extreme southern portion of Morocco. Skies are clear 10-20 percent of the time; partly cloudy, 25-45 percent; cloudy, 25-45 percent; and overcast, 5-20 percent. Precipitation occurs 8-12 days per month at most locations. Rainfall may be heavy in the extreme northern areas. Snowfall is expected at locations above 5000 feet. Occasionally snowfall blocks highways and causes extensive damage. Gusty surface winds greater than 16 knots occur 5-25 percent of the time; gale force winds, 1-2 percent.

2. FLYING WEATHER. Generally good. The ceiling/visibility is greater than or equal to 5000 feet/6 miles is 60-75 percent of the time; equal to or greater than 1500/3, 85-90 percent. The coastal locations have the highest incidence of low cloudiness. Mountain-wave turbulence occurs in the vicinity of the Atlas Mountains.

3. RECONNAISSANCE WEATHER. Generally good. The sky cover is 2/8 or less 25-55 percent of the time. The visibility is equal to or greater than 3 miles 95-99 percent of the time. The southern portion of Morocco has the highest frequency of good aerial reconnaissance weather.

4. TERMINAL WEATHER. Tangiers, Morocco. Cloudy, cool, and rainy with frequent gusty surface winds. Rainfall, very heavy at times, occurs 9-12 days per month. The ceiling/visibility is equal to or greater than 300/1 generally 99 percent of the time. Gusty surface winds greater than 16 knots occur 10-15 percent of the time; gale force winds, 1 percent. Runway crosswinds greater than 15 knots occur 10-15 percent of the time; greater than 25 knots, 1 percent.

5. EXPOSURE WEATHER. Rainy in the extreme north, snowy in the mountains, and dry in the extreme south. Mean precipitation amounts of 7-10 inches per month are reported at some locations in the north. Snowfall is sometimes heavy at locations above 5000 feet. In the extreme south, rain averages 1-2 inches per month. Mean minimum temperatures are generally in the mid 40's (F) and mean maximums are generally in the low 60's. In the mountains temperatures can reach a minimum of 5-10F below zero.

<u>TANGIERS, MOROCCO</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	76	71	72
Mean Maximum	61	60	61
Mean Minimum	48	47	48
Absolute Minimum	31	28	34
MEAN PRECIPITATION (INCHES)	6.1	5.1	3.9
MEAN NUMBER OF DAYS			
Precipitation	12	9	11
Thunderstorms	*	*	3

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 65-85 percent of the time. Unfavorable conditions are generally due to gusty surface winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Tangiers, Morocco. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0657	0705	0645
Last Light	1740	1801	1832

(Prepared: 31 July 1979)

MARCH - MAY

1. GENERAL. The weather is cloudy and warm with light to moderate precipitation over all of Morocco. Skies are clear 10-20 percent, partly cloudy 25-40 percent, cloudy 25-50 percent, and overcast 5-25 percent of the time. Precipitation is expected on 5-8 days per month at most locations. Snowfall is expected on 1-5 days per month in the coastal and lowland areas and up to 8 days per month in the mountains. Gusty surface winds greater than 16 knots are expected 10-25 percent of the time in the extreme north and in the Atlas Mountains, and 1-2 percent of the time in other locations. Gale force winds are reported 1-10 percent of the time in the north and in the mountains and are rare at other locations.

2. FLYING WEATHER. Generally good. The ceiling/visibility is equal to or greater than 5000 feet and/or 6 miles 45-65 of the time; equal to or greater than 1500/3, 85-95 percent. Generally, the coastal locations have the highest incidence of low cloudiness. Numerous thunderstorms and mountain-wave turbulence can be expected in the vicinity of the Atlas Mountains.

3. RECONNAISSANCE WEATHER. Fair to good. The sky cover is 2/8 or less 25-40 percent of the time. Visibility is equal to or greater than 3 miles 95 percent of the time.

4. TERMINAL WEATHER. Tangiers, Morocco. Cloudy and warm with light rainfall and gusty winds. The ceiling/visibility is equal to or greater than 300/1 approximately 99 percent of the time. Rain falls on 12 days in March decreasing to 6 days in May. Gusty surface winds in excess of 16 knots are expected 10-15 percent of the time; gale force winds, 1 percent. Runway crosswinds greater than 15 knots occur 10 percent of the time; greater than 25 knots, 1 percent.

5. EXPOSURE WEATHER. Generally warm with light rainfall. Mean minimum temperatures are in the mid 40's to mid 50's (F) with mean maximums in the high 60's to high 70's. Snowfall is expected on 1-5 days per month at some mountain locations.

<u>TANGIERS, MOROCCO</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	73	78	79
Mean Maximum	63	65	71
Mean Minimum	50	51	56
Absolute Minimum	36	39	43
<u>MEAN PRECIPITATION (INCHES)</u>	4.4	3.0	1.6
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	12	9	6
Thunderstorms	2	1	1

6. PARADROP WEATHER. Favorable 65-85 percent of the time. Unfavorable conditions are usually due to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Tangiers, Morocco. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0610	0526	0450
Last Light	1857	1923	1949

(Prepared: 31 August 1979)

JUNE - AUGUST

1. GENERAL. The weather is hot and dry. Skies are clear 20-55 percent, partly cloudy 25-55 percent, cloudy 15-35 percent, and overcast 5-10 percent of the time. Temperatures may exceed 120F in the area east of the Atlas Mountains. Rainfall is expected on 1-2 days per month. Thunderstorms are expected on 6-9 days per month at some mountain locations. In the extreme north and at some mountain locations, gusty surface winds greater than 16 knots are expected 10-20 percent of the time; gale force winds, 2-5 percent.

2. FLYING WEATHER. Good. The percentage frequency of ceiling/visibility equal to or greater than 5000 feet and/or 6 miles is 40-85 percent; equal to or greater than 1500/3, 70-95 percent. Thunderstorms and mountain-wave turbulence occur in the vicinity of the Atlas Mountains.

3. RECONNAISSANCE WEATHER. Usually good. The percent frequency of sky cover 2/8 or less is 40-85 percent. Visibility is equal to or greater than 3 miles 95-99 percent of the time.

4. TERMINAL WEATHER. Tangiers, Morocco. Warm and windy. The ceiling/visibility is equal to or greater than 300/1 generally 99 percent of the time. Visibility is obstructed by fog 1-2 percent of the time, primarily in the early morning hours. It rains on only 1-2 days per month. Gusty surface winds in excess of 16 knots are expected 10-15 percent of the time; gale force winds, 1-2 percent. Runway crosswinds greater than 15 knots occur 5-10 percent of the time; crosswinds greater than 25 knots are rare.

5. EXPOSURE WEATHER. Hot and dry. Mean minimum temperatures range from the mid 50's to the high 60's (F) and the mean maximum temperatures range from the high 70's to over 100F. The highest temperatures occur east of the mountains. Rainfall is expected on 1-3 days per month at most locations.

<u>TANGIERS, MOROCCO</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	100	98	106
Mean Maximum	76	80	82
Mean Minimum	60	64	65
Absolute Minimum	53	52	51
<u>MEAN PRECIPITATION (INCHES)</u>	0.3	*	0.1
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	3	0	1
Thunderstorms	2	*	1

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Favorable 70-95 percent of the time. Unfavorable weather conditions are due primarily to winds greater than 13 knots.

7. ASTRONOMICAL DATA. Tangiers, Morocco. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0437	0449	0515
Last Light	2010	2009	1941

(Prepared: 31 July 1979)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn weather is warm, cloudy, and rainy. Skies are clear 15-30 percent partly cloudy 34-45 percent, cloudy 25-40 percent, and overcast 5-10 percent of the time. Precipitation frequency gradually increases throughout the period from 2 days per month in September to 13 days per month in November. The heaviest and most frequent rains occur in the extreme northern section of Morocco. Snowfall is rare. In the extreme north and at some mountain locations, gusty surface winds greater than 16 knots occur 10-20 percent of the time; gale force, 2-4 percent. Gusty or gale force winds are rare over the remainder of Morocco.

2. FLYING WEATHER. Generally good. The ceiling/visibility is equal to or greater than 5000 feet and/or 6 miles 60-80 percent of the time; equal to or greater than 1500/3, 90-95 percent. Thunderstorms and mountain-wave turbulence can be expected in the vicinity of the Atlas Mountains.

3. RECONNAISSANCE WEATHER. Fair to good. The sky cover is 2/8 or less 35-55 percent of the time. The visibility is equal to or greater than 3 miles 95-99 percent of the time.

4. TERMINAL WEATHER. Tangiers, Morocco. Warm, cloudy, and windy with light to moderate rainfall. The ceiling/visibility is equal to or greater than 300/1 approximately 99 percent of the time. Gusty surface winds in excess of 16 knots are expected 10-20 percent of the time; gale force winds, 1-2 percent. Runway crosswinds greater than 15 knots are expected 10-20 percent of the time; crosswinds greater than 25 knots are rare.

5. EXPOSURE WEATHER. Warm, cloudy, and rainy over most of Morocco. Mean minimum temperatures in the mid 50's (F) in September decrease to the mid 40's by November. Mean maximum temperatures in the mid 80's to mid 90's in September decrease to the mid 60's and 70's by November. Rainfall averages 1-6 days per month in September and 5-13 days per month in November. Rainfall frequency and intensity are greater in the extreme northern area of Morocco.

<u>TANGIERS, MOROCCO</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	95	89	78
Mean Maximum	78	72	65
Mean Minimum	63	59	52
Absolute Minimum	51	42	39
<u>MEAN PRECIPITATION (INCHES)</u>	0.9	3.7	4.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	2	7	13
Thunderstorms	1	2	2

6. PARADROP WEATHER. Favorable 65-95 percent of the time. Weather conditions are unfavorable primarily due to winds greater than 13 knots.

7. ASTRONOMICAL DATA. Tangiers, Morocco. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0540	0604	0632
Last Light	1857	1814	1745

(Prepared: Late September 1978)

SITUATION CLIMATIC BRIEF

NAMIBIA/SOUTHWEST AFRICA

NOVEMBER - APRIL

1. GENERAL. Summer in Namibia is the wet season. The sky cover averages 40-50 percent over much of Namibia. Cloudiness is heavy in the coastal area due to upwelling of cold water in the ocean area to the west. Low clouds and fog frequently persist until the midafternoon hours along the coastal strip. Precipitation averages 1-3 inches per month over the interior regions, but varies widely from year to year. In some years no rainfall has been recorded; in others, as much as 17 inches in a month has occurred. In the arid coastal areas the mean rainfall is less than 1 inch during the rainy season. Wind conditions vary greatly from location to location. Generally, the coastal areas and southern Namibia have the highest frequency of gusty and gale force winds. Thunderstorm frequency varies; the highest frequency is in the mountains near Windhoek where thunderstorms average 2-15 per month. Rainless thunderstorms are common because the very hot and dry surface air evaporates the rain before it reaches the ground.

2. FLYING WEATHER. Generally good in the highlands, but can be quite poor along the coast. A ceiling/visibility of zero-zero is frequently observed in the coastal area primarily during the morning hours. The low clouds and sea fog usually clear or lift by midafternoon. In the southern interior region, skies are generally clear to scattered. However, cloudiness increases to the north, becoming partly cloudy to cloudy much of the time. Turbulence occurs over the mountains and in the thunderstorms and low clouds of the interior region.

3. RECONNAISSANCE WEATHER. Generally fair to poor. The mean number of days with total cloud cover amounts of 2/8 or less and visibility 2.5 miles or greater is 10-20 days. Low cloudiness is usually extensive along the coast in the early morning hours.

4. TERMINAL WEATHER. Windhoek, Namibia. Warm and cloudy with light to moderate showers. Temperatures increase from the high 50's to low 60's (F) in the early morning hours to the low to mid 80's in the afternoon. Mean cloudiness is 4/10 to 5/10 in the morning hours and increases to 6/10 to 7/10 in the afternoon. Mean rainfall averages 1-2 inches per month, but varies widely from year to year. January and March are usually the rainiest months with the daily probability of rainfall ranging from 15-35 percent. Rainfall is usually in the form of thunderstorms. Winds are predominantly easterly at 5-10 knots. Gusty surface winds are expected 5-10 percent of the time; gale force winds are rare. Visibilities are generally good. Fog is a rare occurrence. Haze and/or smoke obstructs visibility on 2-4 days per month. Ceiling/visibility of less than 300/1 is rarely observed.

5. EXPOSURE WEATHER. Hot and dry with an occasional light to moderate rain shower. Temperatures increase from the mid 50's to low 60's in the early morning hours to the high 80's to low 90's by midafternoon. In the interior, mean relative humidity ranges from 50-60 percent in the early morning hours to 20-30 percent in the afternoon. The relative humidity averages 80-90 percent in the coastal areas. Gusty surface winds may cause blowing sand and/or dust in the coastal and southern interior areas. Precipitation occurs on 2-15 days per month and is generally associated with thunderstorms. Rainfall is the heaviest in the interior, north of the capital city of Windhoek.

<u>WINDHOEK, NAMIBIA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	96	97	97	94	94	87
Mean Maximum	84	86	85	83	80	77
Mean Minimum	59	62	63	61	59	55
Absolute Minimum	33	38	39	44	39	36
<u>MEAN PRECIPITATION (INCHES)</u>	1.0	1.8	3.0	3.0	3.2	1.6
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	5	8	10	10	10	5
Thunderstorms	5	7	8	7	7	3

6. PORT/BEACH CONDITIONS. On the coastline north of Walvis Bay winds greater than 16 knots can be expected 20-30 percent of the time; winds greater than 27 knots approximately 1-2 percent. Amphibious landing craft and/or small boats may encounter rough seas 35 percent of the time during November and 10-20 percent during other months. Winds greater than 16 knots occur along the coastline from Walvis Bay southward 35-45 percent of the time; greater than 27 knots, approximately 5 percent. Amphibious landing craft and/or small boats may encounter rough seas 20-35 percent of the time with the January-March period having the highest frequency of rough seas.

7. ASTRONOMICAL DATA. Windhoek, Namibia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0536	0536	0555	0617	0631	0641
Last Light	1937	1958	2007	1956	1932	1903

(Prepared: Late September 1978)

MAY - OCTOBER

1. GENERAL. This is the winter dry season. The weather is cool, cloud free, and quite dry. Temperatures range from the low 40's to low 50's (F) in the early morning hours to the mid 70's to low 80's in the afternoon. June-August are the coldest months. There is a definite warming trend in September; most locations have maximum temperatures in the 90's by October. Mean cloud amounts range from 3/10 to 5/10 except in the coastal area where the mean is 6/10 to 8/10 in the morning hours and 2/10 to 4/10 in the afternoon. Mean precipitation is less than 1 inch per month at all locations. Visibility is frequently obstructed by haze and/or smoke, but rarely goes below 3 miles except along the coast where fog is prevalent.

2. FLYING WEATHER. Generally good except along the coast. On the coast, low clouds and fog are prevalent during the early morning hours, usually clearing or lifting in the afternoon. In the interior, ceilings below 3000 feet are expected approximately 5 percent of the time. Visibility is generally greater than 3 miles. Turbulence can be expected over the mountains.

3. RECONNAISSANCE WEATHER. Generally good. The mean number of days with total cloud cover of 2/8 or less and visibility of 2.5 miles or greater averages 20-29 days per month except along the coast. Reliable data are lacking for the coast; however, low clouds and coastal fog will hinder aerial reconnaissance during the morning hours.

4. TERMINAL WEATHER. Windhoek, Namibia. Cool and cloudless with visibility frequently obstructed by haze and/or smoke. Temperatures range from the mid 40's to low 50's in the early morning hours to the high 60's and low 70's in the

afternoon. Mean cloud amounts range from 1/8 to 2/8. A ceiling/visibility below 300/1 is rare. Haze and/or smoke occur on 5-14 days per month; July through September have the highest frequency. The visibility rarely falls below 3 miles under these conditions. Gusty surface winds are expected approximately 3-5 percent of the time. Gale force winds are rare.

5. EXPOSURE WEATHER. Cool or cold during the mornings and warm in the afternoons. There is little or no rain in the dry season. Gusty winds may cause blowing sand and/or dust.

<u>WINDHOEK, NAMIBIA</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	89	79	77	85	91	93
Mean Maximum	72	68	68	73	77	84
Mean Minimum	48	44	43	47	53	59
Absolute Minimum	29	27	25	31	31	25
MEAN PRECIPITATION (INCHES)	0.3	0.1	0.1	0.1	0.1	0.4
MEAN NUMBER OF DAYS						
Precipitation	2	*	*	*	1	3
Thunderstorms	1	*	*	*	1	4

* = less than 1 day

6. PARADROP WEATHER. Good to poor. During the late evening and early morning hours the weather is favorable 90-95 percent of the time. However, during the late morning and afternoon hours the weather is favorable only 50-70 percent of the time due to winds greater than 13 knots.

7. PORT/BEACH CONDITIONS. The winds on the open seas are greater than 16 knots 25-40 percent of the time; gale force winds, approximately 5 percent. Amphibious landing craft and/or small boats may encounter heavy seas 20-25 percent of the time.

8. ASTRONOMICAL DATA. Windhoek, Namibia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0652	0703	0706	0625	0652	0555
Last Light	1844	1840	1848	1900	1908	1918

(Prepared: 5 August 1981)

SITUATION CLIMATIC BRIEF

SENEGAL/GAMBIA

NOVEMBER - MAY

1. GENERAL. The dry season is partly cloudy, hazy, very hot, and very dry. Mean sky cover ranges from 20-55 percent. Prevailing northeasterly winds transport large quantities of suspended dust from the Sahara Desert, keeping surface visibilities below 6 miles much of the time. Average daily maximum temperatures are in the 80's and 90's (F) along the coast and frequently over 100F inland. Mean minimums are generally in the 60's. Rain is practically nonexistent during this period. Several consecutive rainless months are normal. Accordingly, thunderstorms are very rare. Surface winds frequently become strong and gusty during the afternoon, especially during March through May.

2. FLYING WEATHER. Good. However, inflight visibility is frequently restricted by haze and dust. Ceilings below 5000 feet are infrequent, but visibilities less than 6 miles occur up to 55 percent of the time; less than 3 miles, 5-10 percent. Turbulence below 10,000 feet due to intense surface heating is common.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibilities of 3 miles or greater occur 12-23 days per month.

4. TERMINAL WEATHER. Banjul/Yundum, Gambia. Good. Skies are usually partly cloudy and hazy with ceiling/visibility less than 300/1 extremely rare.

5. EXPOSURE WEATHER. Daytime temperatures are very hot, especially inland; however, nighttime temperatures can be comfortable. Mean relative humidities remain high despite the absence of rain.

<u>BANJUL, GAMBIA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)							
Absolute Maximum	96	96	99	102	104	106	106
Mean Maximum	89	88	88	90	94	91	89
Mean Minimum	65	61	59	61	63	65	67
Absolute Minimum	54	48	45	50	53	54	57
MEAN PRECIPITATION (INCHES)	0.2	0.1	0.0	0.0	0.0	0.0	0.2
MEAN NUMBER OF DAYS							
Precipitation	1	*	0	0	0	0	1
Thunderstorms	0	0	0	0	0	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Generally good. Conditions are favorable for paradrops 40-60 percent of the time on March-May afternoons, and 60-98 percent at other times. Gusty afternoon surface winds can interfere with paradrops from March through May.

7. ASTRONOMICAL DATA. Dakar, Senegal. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0648	0704	0716	0713	0657	0635	0619
Last Light	1901	1906	1923	1936	1942	1946	1953

(Prepared: 5 August 1981)

JUNE - OCTOBER

1. GENERAL. The rainy season is cloudy, hot, and humid with frequent torrential rain and thunderstorms. The onset and cessation of the rainy season is accompanied by violent thunderstorms, locally called tornadoes, although these should not be confused with the twisters of the United States. In northeastern Senegal the rainy season begins later, ends earlier, and is not so intense as in the remainder of the area. Mean cloud cover ranges from 55-95 percent. Mean daily maximum temperatures range from 85F to 95F. Minimum temperatures range from 70F to 75F. Mean relative humidities are 75-90 percent. Rain occurs on 15-26 days per month; frequencies in northeastern Senegal are lower. During the height of the rainy season (July-September) thunderstorms occur 15-20 days per month at some locations.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occur as often as 80 percent of the time; less than 1500/3 up to 55 percent; and less than 500/1 up to 10 percent of the time. Dense cloudiness and numerous thunderstorms cause the poor conditions. In northeastern Senegal conditions are better.

3. RECONNAISSANCE WEATHER. Poor due to extensive cloudiness. Sky cover of 2/8 or less and visibilities of 3 miles or greater are seldom encountered during the rainy season.

4. TERMINAL WEATHER. Banjul/Yundum, Gambia. Fair to good. Conditions are normally cloudy with frequent heavy rain showers or thunderstorms. Ceiling/visibility less than 1500/3 occurs 15-55 percent of the time; less than 300/1, 5-6 percent of the time during September and October, rarely at other times.

5. EXPOSURE WEATHER. The heat, humidity, and heavy rainfall make conditions uncomfortable for people and harmful to equipment.

<u>BANJUL, GAMBIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)					
Absolute Maximum	100	93	93	94	99
Mean Maximum	89	86	85	87	89
Mean Minimum	73	74	73	73	72
Absolute Minimum	65	69	68	63	61
MEAN PRECIPITATION (INCHES)	2.3	11.1	19.7	12.2	4.3
MEAN NUMBER OF DAYS					
Precipitation	10	18	21	18	13
Thunderstorms	10	18	16	18	13

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrops 50-95 percent of the time. Rain showers or low ceilings can occasionally interfere.

7. ASTRONOMICAL DATA. Banjul, Gambia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0616	0624	0632	0634	0636
Last Light	1958	2001	1950	1929	1908

(Prepared: 22 February 1980)

SITUATION CLIMATIC BRIEF

SOMALIA

ANNUAL

1. GENERAL. Somalia is hot, humid, windy, and dusty. Skies are clear to partly cloudy in the north and mostly cloudy in the south. Precipitation is scanty. The wettest locations in the south receive 30-35 inches per year; April, May, October, and November are the wettest months in the south. The north coast on the Gulf of Aden receives almost no rain; what little rain falls on the north coast usually occurs in December and January. Mean cloudiness is 15-40 percent in the north and 35-90 percent in the south. Much of the cloudiness in the south constitutes ceilings less than 2000 feet. Mean daily maximum temperatures in the north range from the mid 80's (F) to the low 100's with the hottest temperatures occurring in June-August. In the south the hottest temperatures occur in February-March. Maximums here range from the upper 80's to the mid 100's. Morning low temperatures range from around 70F to nearly 90F. The eastern part of Somalia has winds of 16 knots or greater almost every day, and gale force winds are frequent, especially from May through September. This results in blowing dust reducing visibility. Thunderstorms are infrequent in Somalia.

2. FLYING WEATHER. Generally good in the northern two-thirds of Somalia and fair in the southern one-third. Ceilings less than 1500 feet occur as often as 75 percent of the time along the southeastern coast. Summer and autumn have the highest frequency of low ceilings in this area. Visibilities less than 6 miles are frequent in eastern Somalia due to blowing dust. Thermal turbulence is frequent and occasionally severe during hot afternoons in northern and eastern Somalia. It may extend to several thousand feet in height. Moderate clear-air turbulence is likely to be encountered near the easterly jet stream in summer and autumn.

3. RECONNAISSANCE WEATHER. Very poor in southern Somalia due to cloud cover. The remainder of the country has fair to good reconnaissance weather, although conditions may briefly become poor due to blowing dust. Sky cover 2/8 or less and visibility of 3 miles or greater occur up to 20 days per month except in the interior near the Ethiopian border where favorable conditions may occur up to 30 days per month.

4. TERMINAL-WEATHER. Mogadiscio, Somalia. Fair to good. Ceilings are frequently below 2000 feet during the summer months, but conditions less than 300/1 are rare. Rainfall is frequent but light during June and July. Data on thunderstorm frequencies are not available, but estimates are that less than 5 thunderstorms per year occur. Runway crosswinds greater than 15 knots happen 8-14 percent of the time during the afternoon from December to March.

5. EXPOSURE WEATHER. The combination of high temperatures, persistently high humidities, scanty rainfall, and dust-laden winds often makes living conditions extremely uncomfortable.

MOGADISCIO, SOMALIA	JAN	FEB	MAR	APR	MAY	JUN
TEMPERATURE (F)						
Absolute Maximum	100	98	93	100	94	90
Mean Maximum	89	89	89	91	88	84
Mean Minimum	74	78	76	77	76	75
Absolute Minimum	64	65	68	68	65	68
MEAN PRECIPITATION (INCHES)	*	*	*	2.3	2.3	3.8
MEAN NUMBER OF DAYS						
Precipitation	*	*	1	5	7	20
Thunderstorms	N/A	N/A	N/A	N/A	N/A	N/A

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	89	93	93	94	98	96
Mean Maximum	84	85	87	87	88	88
Mean Minimum	74	73	73	75	76	74
Absolute Minimum	59	60	64	65	69	68
MEAN PRECIPITATION (INCHES)	2.5	1.9	1.0	0.9	1.6	0.5
MEAN NUMBER OF DAYS						
Precipitation	20	11	7	5	5	2
Thunderstorms	N/A	N/A	N/A	N/A	N/A	N/A

* = less than 0.5 day or 0.05 inch

N/A = not available

6. PARADROP WEATHER. Generally good in northern and eastern Somalia at night and poor during the afternoon due to strong winds. Conditions in southern Somalia are poor during the summer due to low clouds. Percentage frequencies of favorable paradrop conditions are not available.

7. ASTRONOMICAL DATA. Mogadiscio, Somalia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0545	0550	0544	0533	0527	0529
Last Light	1831	1836	1832	1825	1823	1829
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>ACT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0535	0536	0530	0522	0521	0531
Last Light	1834	1830	1818	1808	1806	1816

(Prepared: 21 November 1979)

SITUATION CLIMATIC BRIEF

SUDAN

ANNUAL

1. GENERAL. Most of Sudan has a hot, dry desert climate. The southern one-third of the country has considerably more cloudiness and rainfall than the northern two-thirds. The northern desert averages 5-30 percent cloudiness; central Sudan, 10-60 percent; and southern Sudan, 60-80 percent. June through September are the cloudiest months. Annual rainfall varies from less than an inch in the north to 50-60 inches in the extreme south. Temperatures are hot year-round. Daily minimums are 50-70F in winter and 70-85F in summer. Daily maximums are 80-100F in winter and 80-110F in summer. Extreme southern locations have their hottest temperatures in winter due to lessened cloud cover. Temperatures of 115-120F are common in central and northern Sudan. The prevailing wind direction is northeasterly September-May and southwesterly June-August. Dust storms occur over northern and central Sudan during all seasons. The haboob is a special type of dust storm which occurs during the summer half year in connection with thunderstorms or turbulent air conditions. Thunderstorms occur in southern Sudan on 5-15 days per month from March-October. They occur on about 3-8 days per month in central Sudan from May-September. Thunderstorms are rare in northern Sudan.

2. FLYING WEATHER. Fair to good. Surface and low-level in-flight visibility is frequently reduced by dust storms, especially in summer. Surface visibilities may be reduced by smoke and haze on winter mornings. Ceilings less than 5000 feet occur in southern Sudan approximately 10-25 percent of the time during the summer. Thermal and orographic turbulence extending to 10,000 feet or higher are frequently encountered. Icing may occasionally be encountered above the freezing level in southern and central Sudan during the summer.

3. RECONNAISSANCE WEATHER. Generally good in northern and central Sudan. Poor in central Sudan during the summer, and usually fair to poor year-round in southern Sudan. Sky cover less than or equal to 2/8 and visibility greater than or equal to 3 miles occur 1-15 days per month in southern Sudan, and 4-28 days per month in central and northern Sudan.

4. TERMINAL WEATHER. Khartoum, Sudan. Usually good. Cloud cover, precipitation, and frequency of dust storms increase during the summer months, but conditions less than 300 feet and/or 1 mile are infrequent.

5. EXPOSURE WEATHER. Normally very hot and dry in northern and central Sudan, but winter mornings can be cool. Southern Sudan is hot and cloudy with frequent rainfall during the summer months.

<u>KHARTOUM, SUDAN</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	104	111	113	117	117	118
Mean Maximum	90	93	100	105	107	106
Mean Minimum	59	61	66	72	77	79
Absolute Minimum	41	44	49	53	61	67
<u>MEAN PRECIPITATION (INCHES)</u>	*	*	*	*	0.2	0.3
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	0	0	*	*	2	2
Thunderstorms	0	0	0	0	3	1

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	117	110	114	113	108	104
Mean Maximum	101	98	102	104	97	92
Mean Minimum	77	76	77	75	68	62
Absolute Minimum	65	64	61	62	54	45

MEAN PRECIPITATION (INCHES)	2.0	2.9	0.8	0.2	*	*
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MEAN NUMBER OF DAYS

Precipitation	6	7	4	1	*	*
Thunderstorms	5	6	3	2	*	0

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Generally good. However, conditions in northern and central Sudan may be unfavorable 50-70 percent of the time during the late morning and early afternoon due to wind in excess of 13 knots. Rainfall may interfere with paradrops in southern Sudan during the summer months.

7. ASTRONOMICAL DATA. Khartoum, Sudan. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0557	0553	0537	0514	0458	0455
Last Light	1801	1815	1821	1826	1835	1845
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0503	0512	0517	0520	0529	0545
Last Light	1848	1836	1813	1751	1739	1744

(Prepared: 6 May 1981)

SITUATION CLIMATIC BRIEF

TANZANIA

NOVEMBER - MAY

1. GENERAL. Days are most cloudy, hot, and humid with frequent, at times heavy, precipitation. Mean cloud cover ranges from 60-80 percent. Daily minimum temperatures average 65F to 75F; maximums average 80F to 90F. Locally heavy rain showers and thunderstorms occur frequently, 10-20 days per month, and can cause flash floods.

2. FLYING WEATHER. Generally good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 4-15 percent of the time; less than 1500/3, 3-10 percent; and less than 500/1, up to 5 percent of the time. Heavy afternoon thunderstorms and rain showers make local ceiling/visibility poor and make turbulence and icing possible. Morning fog occasionally occurs over the interior highlands and near water bodies.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur only 2-5 days per month for most stations.

4. TERMINAL WEATHER. Dar Es Salaam, Tanzania. Good. Poor for brief periods due to rain showers and thunderstorms. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time.

5. EXPOSURE WEATHER. Daytime temperatures are mostly in the 80's (F) and humidity is usually high with frequent afternoon rain showers and thunderstorms. Evenings are mild with lows in the mid 60's.

<u>DAR ES SALAAM, TANZANIA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)							
Absolute Maximum	94	95	95	95	96	95	91
Mean Maximum	86	86	86	88	88	87	85
Mean Minimum	72	75	77	76	74	73	71
Absolute Minimum	66	69	69	69	69	66	64
MEAN PRECIPITATION (INCHES)	3.1	3.7	2.8	2.4	4.7	11.0	7.2
MEAN NUMBER OF DAYS							
Precipitation	9	10	8	7	12	19	14
Thunderstorms	2	4	2	3	6	8	1

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrops 65-90 percent of the time. In the mountains gusty winds and peaks and ridges obscured by clouds affect paradrops.

7. ASTRONOMICAL DATA. Dar Es Salaam, Tanzania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0533	0540	0556	0606	0607	0604	0603
Last Light	1843	1857	1909	1908	1857	1843	1846

(Prepared: 6 May 1981)

JUNE - OCTOBER

1. GENERAL. The weather is partly cloudy with mild temperatures and sparse rainfall. Mean cloud cover varies from 50-60 percent along the coast to as low as 35-45 percent inland. Daily temperatures range from 55F to 65F for minimums to 75F to 85F for maximums. Temperatures can be 10 degrees cooler at mountain locations. Light precipitation occurs on 3-6 days per month. Thunderstorms are infrequent except at a few inland locations. Gale force winds (28 knots or greater) are rare except at higher elevations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 2-3 percent of the time; less than 1500/3, 1-2 percent; and less than 500/1, about 1 percent of the time. A few stations along Lake Victoria have thunderstorms on 3-5 days per month.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days per month.

4. TERMINAL WEATHER. Dar Es Salaam, Tanzania. Good. Ceiling/visibility less than 300/1 occur 5 percent of the time in June, but less frequently thereafter.

5. EXPOSURE WEATHER. Days and nights are quite comfortable during this period. The region is humid, however, with an average of 3-6 rainy days per month. The mountainous areas are generally cooler and drier than other parts of the country.

<u>DAR ES SALAAM, TANZANIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)					
Absolute Maximum	90	90	89	91	92
Mean Maximum	84	83	83	83	84
Mean Minimum	67	66	66	66	68
Absolute Minimum	60	60	60	63	62
MEAN PRECIPITATION (INCHES)	1.5	1.2	1.0	1.1	1.5
MEAN NUMBER OF DAYS					
Precipitation	6	5	6	6	6
Thunderstorms	0	0	0	0	1

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrops 65-90 percent of the time. In the mountains conditions are fair due to gusty winds and obscured peaks and ridges.

7. ASTRONOMICAL DATA. Dar Es Salaam, Tanzania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0609	0614	0610	0556	0541
Last Light	1838	1844	1846	1841	1838

(Prepared: 4 June 1981)

SITUATION CLIMATIC BRIEF

TUNISIA

DECEMBER - FEBRUARY

1. GENERAL. Winter is partly cloudy and cool with frequent light rain occurring on 3-15 days per month. Mean cloud cover varies from 35 to 55 percent. Mean daily minimum temperatures range from 35F to 45F; Maximums range from 55F to 65F. Precipitation is infrequent in the interior but frequent along the coast. Thunderstorms are rare. Gale force winds (28 knots or greater) are rare over most of Tunisia, but can occur on up to 4 days per month at some inland locations.
2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500/3, 3-10 percent; and less than 500/1, 1-3 percent of the time.
3. RECONNAISSANCE WEATHER. Good to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-20 days per month. Fair to occasionally poor conditions exist along the coast during the early afternoon hours due to cloud cover.
4. TERMINAL WEATHER. Tunis/Carthage, Tunisia. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time.
5. EXPOSURE WEATHER. Usually cool to mild with frequent local rainfall. The average humidity is 75-85 percent.

<u>TUNIS/CARTHAGE, TUNISIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	77	75	81
Mean Maximum	61	58	60
Mean Minimum	47	45	46
Absolute Minimum	36	32	34
<u>MEAN PRECIPITATION (INCHES)</u>	2.8	2.6	1.9
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	14	13	12
Thunderstorms	1	1	1

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 60-85 percent of the time. Cloud cover makes conditions occasionally fair at coastal stations.

7. ASTRONOMICAL DATA. Tunis/Carthage, Tunisia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0656	0702	0642
Last Light	1733	1753	1825

(Prepared: 4 June 1981)

MARCH - MAY

1. GENERAL. Spring is partly cloudy and increasingly warm with occasional light rain. Mean cloud cover varies from 30 to 55 percent; the lower amounts occur in the interior. Mean daily minimum temperatures increase from about 45F to 60F during the season; maximums increase from 65F to 85F. Light rain or rain showers are frequent along the northern coast and mountain stations, but infrequent elsewhere. Thunderstorm activity increases by May. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 1-3 percent of the time.

3. RECONNAISSANCE WEATHER. Good to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-20 days per month. Occasionally fair, especially along the northern and eastern coastal regions due to cloud cover.

4. TERMINAL WEATHER. Tunis/Carthage, Tunisia. Good. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time mostly during the morning. Thunderstorm frequency gradually increases.

5. EXPOSURE WEATHER. Warm days and cool nights. Rainfall occurs on 5-10 days a month. Gale force winds are rare, but winds over 16 knots occur as often as 10 days per month.

<u>TUNIS/CARTHAGE, TUNISIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	90	90	104
Mean Maximum	64	69	75
Mean Minimum	48	52	58
Absolute Minimum	34	41	43
MEAN PRECIPITATION (INCHES)	1.5	1.2	0.7
MEAN NUMBER OF DAYS			
Precipitation	9	6	5
Thunderstorms	2	2	3

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrops 70-95 percent of the time except during the afternoon when gusty winds and increased cloud cover make conditions favorable only 40-60 percent of the time. Conditions are fair along the northern coast due to cloud cover.

7. ASTRONOMICAL DATA. Tunis/Carthage, Tunisia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0606	0518	0442
Last Light	1852	1921	1949

(Prepared: 4 June 1981)

JUNE - AUGUST

1. GENERAL. Summers are fair to partly cloudy and hot. Mean cloud cover varies from 10 to 45 percent and is greatest in June. Mean daily minimum temperatures vary from 60F to 75F. Maximums range from 85F to 100F; a couple of inland stations vary between 101F and 108F during all months of the summer, however. Rain occurs on 1-5 days a month throughout the season; July is the driest month of the year. Thunderstorms occur on 1-4 days a month and are least frequent at interior stations. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-25 percent of the time; less than 1500/3, 2-10 percent; and less than 500/1, less than 2 percent of the time. Thunderstorms occur on 1-4 days a month, primarily along the northern coast.

3. RECONNAISSANCE WEATHER. Fair in June due to morning cloud cover. Good in July and August. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 15-28 days a month. The best conditions occur in July.

4. TERMINAL WEATHER. Tunis/Carthage, Tunisia. Good. Ceiling/visibility less than 300/1 occurs 2 percent of the time as a result of early morning fog. Thunderstorms occur 1-3 days a month and rain 1-2 days a month with a minimum of both phenomena in July. Crosswinds of 15 knots or greater occur about 4 days out of 10, making them most likely potential terminal weather problem.

5. EXPOSURE WEATHER. Generally uncomfortable during the daytime because of high temperatures and humidities, but these conditions moderate by evening.

<u>TUNIS/CARTHAGE, TUNISIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	109	115	116
Mean Maximum	84	89	89
Mean Minimum	65	69	70
Absolute Minimum	49	59	52
MEAN PRECIPITATION (INCHES)	0.2	*	0.4
MEAN NUMBER OF DAYS			
Precipitation	3	1	3
Thunderstorms	3	1	3

* = less than 0.05 inch

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 40-65 percent of the time during the afternoon and 75-95 percent of the time otherwise. Fair conditions occur at some coastal locations due to afternoon winds greater than 13 knots which occur up to 6 days a month.

7. ASTRONOMICAL DATA. Tunis/Carthage, Tunisia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0429	0441	0508
Last Light	2010	2008	1939

(Prepared: 29 May 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumns are partly cloudy and warm with occasional brief rain showers and thunderstorms. Mean cloud cover varies from 25 to 60 percent. Temperatures gradually decrease through the period with average minimums falling from the upper 60's (F) in September to the low 50's by November and average maximums decreasing from the mid 90's to the mid 60's. Thunderstorm frequency is at a maximum, and rainfall is likely an average of 7 days per month at coastal locations. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs less than 15 percent of the time; less than 1500/3, 3-9 percent; and less than 500/1, 2-4 percent of the time. Lower conditions occur along the coast. Turbulence and icing associated with thunderstorms pose a hazard to flying operations.

3. RECONNAISSANCE WEATHER. Good to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-20 days per month. Good conditions prevail from late evening through early morning, fair at other times due to cloudiness. Occasionally, poor conditions occur during the afternoon at coastal locations.

4. TERMINAL WEATHER. Tunis/Carthage, Tunisia. Good. Ceiling/visibility less than 300/1 occurs up to 2 percent of the time. Crosswinds in excess of 15 knots occur as often as 40 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Warm during the day with mild evenings. Rain occurs predominantly along the coasts and in the mountains.

<u>TUNIS/CARTHAGE, TUNISIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	111	98	88
Mean Maximum	85	76	69
Mean Minimum	68	61	54
Absolute Minimum	55	45	38
MEAN PRECIPITATION (INCHES)	1.3	1.7	1.9
MEAN NUMBER OF DAYS			
Precipitation	5	7	9
Thunderstorms	5	6	3

6. PARADROP WEATHER. Generally good. Cloud cover and gusty winds can be limiting factors at times, especially along the northern coast and over the mountains.

7. ASTRONOMICAL DATA. Tunis/Carthage, Tunisia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0535	0601	0631
Last Light	1853	1808	1737

(Prepared: 31 July 1979)

SITUATION CLIMATIC BRIEF

WESTERN SAHARA

DECEMBER - FEBRUARY

1. GENERAL. The weather is cool, dry, and windy. Mean maximum temperatures along the coast range from the low 60's to the 70's (F). Temperatures in the interior desert region may exceed 100F. Skies are clear 50-55 percent, partly cloudy 25-30 percent, cloudy 15-20 percent, and overcast approximately 5 percent of the time. Rainfall occurs on only 1-2 days per month. Thunderstorms are very rare. Fog occurs mostly during the early morning hours and may persist into the afternoon. Visibility is occasionally obstructed by smoke/haze and/or blowing sand/dust. Severe dust storms/sandstorms may occur in the coastal areas as well as the interior desert region. Gustly surface winds in excess of 16 knots are expected 15-25 percent of the time; gale force winds approximately 1 percent.

2. FLYING WEATHER. Good. Ceiling/visibility equal to or greater than 5000 feet and/or 6 miles occurs 80-85 percent of the time; equal to or greater than 1500/3, 95 percent. Flying activities may be restricted by early morning fog and an occasional dust storm/sandstorm. Low-level turbulence may be present over the desert regions.

3. RECONNAISSANCE WEATHER. Good. Sky cover is 2/8 or less 60-65 percent of the time. Visibility equal to or greater than 3 miles is estimated to occur 95 percent of the time. The coastal regions may be obstructed during the early morning hours by fog and low cloud.

4. TERMINAL WEATHER. Villa Cisneros, Western Sahara. Cool, dry, and windy. Early morning fog and low clouds are occasionally present and may persist until the afternoon hours. Ceiling/visibility equal to or greater than 300/1 is estimated to occur 95-99 percent of the time. Runway crosswinds greater than 15 knots occur 5 percent of the time.

5. EXPOSURE WEATHER. Generally cool, dry, and windy in the coastal regions and hot, dry, and windy in the interior. Temperatures may exceed 100F in the interior desert regions. Occasional severe sandstorms/dust storms may be hazardous to personnel and damaging to equipment.

<u>VILLA CISNEROS, WESTERN SAHARA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	85	87	93
Mean Maximum	72	71	73
Mean Minimum	58	56	57
Absolute Minimum	49	49	48
MEAN PRECIPITATION (INCHES)	0.5	0.1	0.1
MEAN NUMBER OF DAYS			
Precipitation	2	1	1
Thunderstorms	0	0	*

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 15-55 percent of the time. The afternoon hours are the least favorable for paratroops due to winds being in excess of 13 knots.

7. ASTRONOMICAL DATA. Villa Cisneros, Western Sahara. (Date as of the 15th/ local standard time)

	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0714	0724	0715
Last Light	1844	1839	1922

(Prepared: 31 July 1979)

MARCH - MAY

1. GENERAL. The weather is cool, dry, and windy in the coastal areas and hot, dry, and windy in the interior. Mean maximum temperatures along the coast range from the high 60's to the high 70's (F). Temperatures in the interior desert region may reach 115F. Skies are clear 50-55 percent, partly cloudy 25-30 percent, cloudy 15-20 percent, and overcast approximately 5 percent of the time. Rainfall is virtually nonexistent. Fog is occasionally present during the morning hours and may persist into the afternoon. Severe sandstorms/dust storms may occur in the coastal areas as well as the interior desert region. Gusty surface winds in excess of 16 knots occur 35-60 percent of the time; gale force winds, 5 percent.

2. FLYING WEATHER. Generally good. Ceiling/visibility equal to or greater than 5000 feet and/or 6 miles is estimated to occur 70-80 percent of the time; equal to or greater than 1500/3, 90-95 percent of the time. Flying activities may be restricted by an occasional sandstorm/dust storm, early morning low clouds or fog, and/or gusty surface winds. Low-level turbulence may be present over the desert regions.

3. RECONNAISSANCE WEATHER. Good. The sky cover is 2/8 or less 65-70 percent of the time. Visibility equal to or greater than 3 miles is estimated to occur 95 percent of the time.

4. TERMINAL WEATHER. Villa Cisneros, Western Sahara. Cool, very dry, and windy. Rainfall is nonexistent. Visibility may be restricted for brief periods due to early morning fog. Ceiling/visibility equal to or greater than 300/1 occurs 99 percent of the time. Runway crosswinds greater than 15 knots are expected 5 percent of the time; crosswinds greater than 25 knots, 1 percent.

5. EXPOSURE WEATHER. Along the coast, mean maximum temperatures are in the mid 70's. In the desert, mean maximum temperatures are in the 90's and frequently exceed 100F. The severe dust storms/sandstorms may be hazardous to personnel and damaging to equipment.

<u>VILLA CISNEROS, WESTERN SAHARA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	97	99	95
Mean Maximum	74	74	75
Mean Minimum	59	60	61
Absolute Minimum	50	53	54
MEAN PRECIPITATION (INCHES)	*	*	*
MEAN NUMBER OF DAYS			
Precipitation	0	0	0
Thunderstorms	0	0	0

* = less than 0.05 inch

6. PARADROP WEATHER. Generally poor. Conditions are favorable 30 percent of the time in March, 20 percent in April, and only 10 percent in May. The weather is unfavorable due primarily to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Villa Cisneros, Western Sahara. (Date as of the 15th/ local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0651	0629	0557
Last Light	1936	1948	2003

(Prepared: 31 July 1979)

JUNE - AUGUST

1. GENERAL. The weather is hot, dry, and very windy over all of the Western Sahara. Skies are clear 55-60 percent of the time, partly cloudy 20 percent, cloudy 15-20 percent, and overcast 5-10 percent. Mean maximum temperatures are in the low 80's (F) in the coastal areas and in excess of 100F in the interior desert region. Rainfall is nonexistent. Gusty surface winds in excess of 16 knots are expected 65-70 percent of the time; gale force winds, 5 percent. Visibility may be obstructed by blowing sand/dust 10-25 percent of the time. Sandstorms/dust storms may be severe at times.

2. FLYING WEATHER. Fair to poor due to high winds and blowing sand/dust. Ceiling/visibility equal to or greater than 5000 feet and/or 6 miles is estimated to occur 35-60 percent; equal to or greater than 1500/3 is estimated to occur 75-85 percent of the time.

3. RECONNAISSANCE WEATHER. Generally good. The percentage frequency of occurrence of sky cover 2/8 or less is 65-70 percent. Visibility equal to or greater than 3 miles occurs 85-95 percent of the time.

4. TERMINAL WEATHER. Villa Cisneros, Western Sahara. Hot, windy, and dusty. Ceiling/visibility equal to or greater than 300/1 occurs 98 percent of the time. Early morning fog or low clouds occur 1 percent of the time. Blowing sand/dust restrict visibility 10-25 percent of the time. Runway crosswinds greater than 15 knots occur 2-3 percent of the time; greater than 25 knots, rarely.

5. EXPOSURE WEATHER. Hot, dry, windy, and cloudless weather prevails over all of Western Sahara. Temperatures may exceed 120F in the interior desert region. Sandstorms/dust storms reach a maximum frequency of occurrence during this period. Sandstorms/dust storms may be hazardous to personnel and damaging to equipment.

<u>VILLA CISNEROS, WESTERN SAHARA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	96	101	103
Mean Maximum	77	78	80
Mean Minimum	63	65	66
Absolute Minimum	53	54	56
MEAN PRECIPITATION (INCHES)	0	0	0.1
MEAN NUMBER OF DAYS			
Precipitation	0	0	1
Thunderstorms	0	0	*

* = less than 0.5 day

6. PARADROP WEATHER. Generally poor. The weather is favorable only 5-10 percent of the time; unfavorable during all hours of the day due to gusty surface winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Villa Cisneros, Western Sahara. (Date as of the 15th/ local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0550	0600	0615
Last Light	2017	2019	2001

(Prepared: 31 July 1979)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn weather is warm and dry with a gradual decrease in gusty wind conditions. The sky is clear 45-55 percent, partly cloudy 25-30 percent, cloudy 15-20 percent, and overcast approximately 5 percent of the time. Rain is light and occurs 1-2 days per month. Gusty surface winds in excess of 16 knots are expected 60 percent of the time in September, 35 percent in October, and 20 percent in November. Gale force winds are expected 5 percent of the time in September and are rare in other months. Visibility in the coastal areas may be restricted due to early morning fog. Sandstorms/dust storms may be severe at times.

2. FLYING WEATHER. Generally good. Ceiling/visibility equal to or greater than 5000 feet and/or 6 miles occurs 65-80 percent of the time; equal to or greater than 1500/3, 90-95 percent of the time. Flying activities may be restricted in the coastal areas due to heavy fog and low clouds.

3. RECONNAISSANCE WEATHER. Generally good. Sky cover equal to or less than 2/8 occurs 60-65 percent of the time. Visibility of 3 miles or greater occurs 95 percent of the time. The coastal areas may be obscured by early morning fog and low clouds.

4. TERMINAL WEATHER. Villa Cisneros, Western Sahara. Warm, dry, and windy. Visibility may be restricted by early morning fog 1-3 percent of the time. The fog usually lifts or clears shortly after sunrise. Ceiling/visibility equal to or greater than 300/1 occurs 99 percent of the time. Runway crosswinds greater than 15 knots are expected 2-3 percent of the time, crosswinds greater than 25 knots are rare.

5. EXPOSURE WEATHER. Warm, dry, windy, and dusty over all of the Western Sahara. Occasionally, severe dust storms/sandstorms may be hazardous to personnel and damaging to equipment.

<u>VILLA CISNEROS, WESTERN SAHARA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	107	103	99
Mean Maximum	80	80	77
Mean Minimum	67	65	63
Absolute Minimum	54	55	53
MEAN PRECIPITATION (INCHES)	0.6	0.1	0.1
MEAN NUMBER OF DAYS			
Precipitation	2	1	2
Thunderstorms	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 10 percent of the time in September, 30 percent in October, and 45 percent in November. The weather is unfavorable due primarily to gusty surface winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Villa Cisneros, Western Sahara. (Date as of the 15th/ local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0637	0638	0654
Last Light	1930	1900	1843

(Prepared: 7 August 1979)

SITUATION CLIMATIC BRIEF

ZAIRE

ANNUAL

1. GENERAL. The weather in Zaire is hot and humid all year, and it is rainy or dry depending on the time of year. The country straddles the Equator, and the weather is controlled by the intertropical convergence zone year-round. The seasons are reversed north and south of the Equator. During approximately April through September the northern part of the country has its rainy season, and the southern part of the country, its dry season. This situation is reversed during October through May. The central part of the country does not have a well-defined, prolonged dry season. The southern part of the country has a longer, more pronounced dry season than the northern part. During the wet season all parts of the country are subject to line squalls, which are accompanied by thunderstorms and sometimes violent winds. During the height of the rainy season line squalls may occur as often as 10 times a month. The mean number of days per month with rainfall varies from 0-24, depending on location and time of year. Minimum temperatures are usually in the upper 60's (F) and maximum temperatures reach the mid to upper 80's. The southern uplands are cooler than the remainder of the country. Frosts are not uncommon there during the dry season.

2. FLYING WEATHER. Frequently poor during the early morning due to dense fog and low cloud ceilings, especially during the dry season. Conditions are usually good after the fog lifts at about 1000 hours local time. The ceiling/visibility is less than 1500 feet and/or 3 miles during the morning hours 5-40 percent of the time. Conditions less than 500/1 occur as often as 15 percent of the time at some locations. During the rainy season line squall activity presents a hazard to flying operations.

3. RECONNAISSANCE WEATHER. Generally poor in the part of the country having the active rainy season. Mean cloudiness is generally 4/8 to 5/8. Morning reconnaissance conditions are poor during the dry season due to dense fog and low clouds, but become fair to good when the fog dissipates.

4. TERMINAL WEATHER. Kinshasa, Zaire. Fair to good. Ceiling/visibility less than 300/1 occurs 3-4 percent of the time during May and June. Kinshasa has its dry season from June through September. Thunderstorms occur on as many as 23 days per month during the rainy season, but are infrequent during the dry season. Skies are frequently cloudy even during the dry season.

5. EXPOSURE WEATHER. Usually hot and humid year-round. Rainfall is frequent and sometimes heavy during the rainy season. The southern uplands may have chilly morning temperatures during the dry season (May-October).

KINSHASA, ZAIRE	JAN	FEB	MAR	APR	MAY	JUN
TEMPERATURE (F)						
Absolute Maximum	93	93	95	94	94	87
Mean Maximum	86	87	88	88	84	80
Mean Minimum	73	72	72	72	72	67
Absolute Minimum	68	67	69	68	67	59
MEAN PRECIPITATION (INCHES)	5.0	5.6	6.7	8.4	5.4	0.2
MEAN NUMBER OF DAYS						
Precipitation	13	15	13	15	12	1
Thunderstorms	13	13	15	23	13	1

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	89	91	93	92	92	92
Mean Maximum	80	82	84	85	85	85
Mean Minimum	64	66	70	71	72	72
Absolute Minimum	56	57	63	66	68	67
MEAN PRECIPITATION (INCHES)	0.1	0.1	1.3	5.5	9.3	6.7
MEAN NUMBER OF DAYS						
Precipitation	1	1	5	12	20	15
Thunderstorms	0	1	5	13	18	15

6. PARADROP WEATHER. Poor during the dry season prior to about 1000 hours local time due to fog and low cloud ceilings, but favorable after 1000 hours. Usually unfavorable in the rainy season due to low clouds and heavy rainfall.

7. ASTRONOMICAL DATA. Kindu, Zaire. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0550	0603	0601	0554	0551	0556
Last Light	1856	1858	1850	1839	1834	1838
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0601	0559	0548	0536	0532	0540
Last Light	1843	1843	1835	1828	1830	1843

(Prepared: 21 November 1979)

SITUATION CLIMATIC BRIEF

ZAMBIA

NOVEMBER - APRIL

1. GENERAL. The weather during this season is cloudy to partly cloudy, warm, and humid, with moderate rain and frequent thunderstorms. Tornadoes or waterspouts occasionally occur over swampy areas. The eastern mountainous part of the country is warm, with heavy rain, frequent violent thunderstorms, and many days with haze and smoke during the early summer. Cloudiness averages at least 70 percent on most days. Daily minimum temperatures are 60-70F. Daily maximum temperatures are 80-90F. Locations along the Zambezi River average about 10 degrees warmer than the remainder of the country with minimums about 75-80F and maximums 95-100F. Surface winds are northeasterly to easterly at 5-10 knots. Thunderstorms, occasionally with hail, occur on an average of 4-25 days per month.

2. FLYING WEATHER. Fair to poor. It is estimated that ceilings below 5000 feet occur about 20-50 percent of the time; and below 1500 feet, 5-20 percent. Visibilities are usually good except in rainfall. An exception is the eastern mountains where visibilities are frequently restricted by smoke and haze during November. In addition, ridges may be obscured by low clouds. Thunderstorms embedded in extensive layered clouds frequently present a hazard to flying operations, especially during afternoon and early evening. Icing can be expected above the freezing level as well.

3. RECONNAISSANCE WEATHER. Generally poor due to cloud cover. Cloud cover equal to or less than 2/8 and visibility equal to or greater than 3 miles occurs on 0-10 days per month.

4. TERMINAL WEATHER. Lusaka, Zambia. Fair to good. Conditions are cloudy with frequent rainfall and thunderstorms. It is estimated that ceiling/visibility less than 300/1 occurs less than 1 percent of the time. Runway crosswinds greater than 15 knots occur 1-3 percent of the time.

5. EXPOSURE WEATHER. Mild to warm with high humidity and frequent (mostly afternoon) rainfall.

LUSAKA, ZAMBIA	NOV	DEC	JAN	FEB	MAR	APR
TEMPERATURE (F)						
Absolute Maximum	99	89	86	92	88	86
Mean Maximum	88	81	79	81	80	81
Mean Minimum	63	62	60	60	61	56
Absolute Minimum	57	56	54	53	52	43
MEAN PRECIPITATION (INCHES)	3.6	5.9	9.1	7.4	5.6	0.7
MEAN NUMBER OF DAYS						
Precipitation	12	19	19	16	14	4
Thunderstorms	13	16	18	15	12	3

6. PARADROP WEATHER. Fair from sunrise to late afternoon and usually good at night. Conditions are favorable 55-75 percent of the time during the day and 75-95 percent of the time at night.

7. ASTRONOMICAL DATA. Lusaka, Zambia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0504	0507	0524	0541	0548	0552
Last Light	1839	1857	1908	1901	1843	1821

(Prepared: 8 February 1980)

MAY - OCTOBER

1. GENERAL. The winter is dry with moderate temperatures. Daily minimum temperatures are in the 40's to 60's (F); daily maximum temperatures are in the 70's to 90's. Periodic surges of low clouds and fog cover the Zambezi Basin. Mountainous regions are the most likely to be overcast. Visibility is lowered by dust and smoke. In August through October the wind speed is appreciably higher than the mean annual speed of 7 knots. Thunderstorms are rare.

2. FLYING WEATHER. Good. Most areas have in excess of 20 cloudless days per month. The exception is the extreme eastern part of the country. Although dust, haze, and smoke are common, they rarely limit visibility to less than 6 miles. In the high plateau, moderate thermal turbulence and convective clouds form during the hotter hours of the day.

3. RECONNAISSANCE WEATHER. Usually good. Visual reconnaissance is possible at least 50 percent of the daylight hours over most of the region. Mountain and river areas are the most likely to be overcast. There are localized dust storms during the afternoon in the interior.

4. TERMINAL WEATHER. Lusaka, Zambia. Good. Crosswinds exceed 15 knots less than 5 percent of the time. Although haze and smoke are frequently present, the visibility is seldom less than 6 miles.

5. EXPOSURE WEATHER. Precipitation is very light. Minimum temperatures below 25F are rare even in the mountains.

<u>LUSAKA, ZAMBIA</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	86	80	80	88	97	98
Mean Maximum	78	72	73	77	85	90
Mean Minimum	51	45	46	49	57	62
Absolute Minimum	42	35	36	39	38	50
<u>MEAN PRECIPITATION (INCHES)</u>	0.1	*	*	0	*	0.4
<u>MEAN NUMBER OF DAYS</u>						
Precipitation**	1	*	*	*	1	2
Thunderstorms	1	*	0	0	1	4

* = less than 0.5 day or 0.05 inch

** = substituted from Broken Hill

6. PARADROP WEATHER. Very good. Conditions are favorable at least 50 percent of the time. The least favorable times of the day are early mornings and afternoons.

7. ASTRONOMICAL DATA. Lusaka, Zambia. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0612	0622	0626	0615	0555	0533
Last Light	1738	1737	1744	1751	1755	1738

(Prepared: 21 November 1979)

SITUATION CLIMATIC BRIEF

ZIMBABWE (RHODESIA)

NOVEMBER - MARCH

1. GENERAL. Summer is hot, wet, and cloudy in Zimbabwe. Mean high temperatures are generally in the 80's and 90's (F), except in the extreme south where they are in the 60's and 70's with occasional dips into the 50's. November is usually the warmest month. Precipitation averaging 2-16 inches per month occurs 10-20 days per month; the northern two-thirds of the country has the greatest incidence. December and January are the wettest months. Visibility is generally poor in fog in the early morning and for short durations in intense afternoon and evening thunderstorms. Low clouds and mist also obscure higher elevations. Thunderstorms occur frequently, particularly during the afternoon and evening, producing turbulence and gusty surface winds of 20-30 knots, and on some occasions, exceeding 50 knots.

2. FLYING WEATHER. Generally fair to poor due to early morning low ceilings and visibility and afternoon and evening thundershowers. The most suitable conditions occur in the southwest and in the southern one-third of the country. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time; cloud bases are generally at 2000-3000 feet or lower in rain showers. Conditions less than 1500/3 occur 5-20 percent of the time.

3. RECONNAISSANCE WEATHER. Generally fair to poor. The months December through February have the greatest incidence of cloud cover. Sky cover equal to or less than 2/8 and visibility greater than 3 miles occur on 2-10 days per month.

4. TERMINAL WEATHER. Salisbury, Zimbabwe. Partly cloudy to cloudy skies, warm temperatures, and frequent afternoon and evening thunderstorms. Low ceilings and visibilities occur predominantly during the early morning hours and with intense thunderstorms. Ceiling/visibility less than 300/1 occurs 1-2 percent of the time. Runway crosswinds greater than 15 knots occur 2-5 percent of the time; crosswinds greater than 25 knots, less than 1 percent.

5. EXPOSURE WEATHER. Extremely uncomfortable at lower elevations due to high temperatures and humidities. Cooler and less humid at higher elevations.

<u>SALISBURY, ZIMBABWE</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>					
Absolute Maximum	100	102	97	94	94
Mean Maximum	85	82	80	79	80
Mean Minimum	58	59	59	59	58
Absolute Minimum	46	48	48	48	46
<u>MEAN PRECIPITATION (INCHES)</u>	3.8	6.4	7.7	7.0	4.6
<u>MEAN NUMBER OF DAYS</u>					
Precipitation	7	10	10	10	8
Thunderstorms	13	12	14	11	7

6. PARADROP WEATHER. Favorable 45-85 percent of the time. Unfavorable weather is due to low clouds in the morning and gusty surface winds associated with thunderstorms in the afternoons.

7. ASTRONOMICAL DATA. Salisbury, Zimbabwe. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0449	0451	0508	0527	0536
Last Light	1832	1851	1901	1853	1833

(Prepared: 11 February 1980)

APRIL - OCTOBER

1. GENERAL. The dry season, autumn to spring, is characterized by cloudless to partly cloudy skies, cool to hot temperatures, and infrequent precipitation. The maximum cloudiness and precipitation occur in eastern Zimbabwe during autumn and late spring. Precipitation occurs on an average of 1-9 days per month in autumn and on 5 days or less in winter and spring. Mean amounts average less than 1 inch. Average daytime high temperatures are 60-100F and nighttime lows, 40-70F. October is the warmest month and July the coolest. The visibility is good, except when restricted with smoke/haze and morning fog over northern and eastern regions. Surface winds are generally light; gale force winds are rare.

2. FLYING WEATHER. Good. However, low clouds and restricted visibilities occur during the morning at northern and eastern regions. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-40 percent of the time; less than 1500/3, 1-10 percent. Turbulence occurs on hot afternoons and with thunderstorms. Thunderstorms occur 1-5 days per month in early autumn and late spring and 1 day or less during the rest of the season.

3. RECONNAISSANCE WEATHER. Fair to good. The least favorable conditions occur in April and May due to a higher incidence of cloud cover, particularly at eastern locales. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-15 days in April and May and on 15-25 days during the rest of the season.

4. TERMINAL WEATHER. Salisbury, Zimbabwe. Good. However, low ceilings and restricted visibilities may occur during the morning and with afternoon thunderstorms. Ceiling/visibility less than 300/1 occurs 1 percent of the time or less. Runway crosswinds greater than 15 knots occur about 5 percent of the time.

5. EXPOSURE WEATHER. Quite warm during the day. Nighttime conditions range from cool in lowland regions to moderately cold with frequent frosts on the eastern plateau.

<u>SALISBURY, ZIMBABWE</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>							
Absolute Maximum	91	87	85	82	87	94	99
Mean Maximum	78	74	71	71	75	82	86
Mean Minimum	54	47	42	42	45	51	55
Absolute Minimum	37	34	31	25	31	34	42
<u>MEAN PRECIPITATION (INCHES)</u>	1.1	0.5	0.1	*	0.1	0.3	1.1
<u>MEAN NUMBER OF DAYS</u>							
Precipitation	4	2	*	*	*	1	4
Thunderstorms	3	1	*	0	*	1	4

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Favorable 60-99 percent of the time during April through July and 30-95 percent from August through October. The least favorable conditions happen near sunrise due to low clouds or visibilities and during the late mornings and afternoons due to winds in excess of 13 knots, particularly at northern and eastern regions.

7. ASTRONOMICAL DATA. Salisbury, Zimbabwe. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0543	0550	0600	0604	0553	0530	0505
Last Light	1898	1753	1751	1759	1807	1812	1818

SITUATION CLIMATIC BRIEFS

PART B

ANTARCTICA, AUSTRALIA, AND OCEANIA

SITUATION CLIMATIC BRIEFS - PART B

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ISLAND OF NEW GUINEA. A-5

(Prepared: 7 October 1981)

SITUATION CLIMATIC BRIEF

ISLAND OF NEW GUINEA

NOVEMBER - APRIL

1. GENERAL. During the north monsoon season intense local showers and wide-spread cloudiness are common. Topographic irregularities cause striking climatic differences between locations, i.e., extreme variability of wind and rainfall patterns. Floods are a real problem during this season. Monsoonal flow directly against mountain ridges produces continual bands of clouds on the windward slopes and peaks. Sea level temperatures range from morning lows in the mid 70's (F) to afternoon highs in the 90's. The temperatures in the mountain regions are cooler and range from the 40's to 70's. Thunderstorms occur on 1-19 days per month over the island.

2. FLYING WEATHER. Fair to poor. Flying conditions on the coast are usually fair during the morning, but become poor by afternoon. The mountain regions are usually obscured by clouds throughout the day. Heavy aircraft icing can be expected above the freezing level.

3. RECONNAISSANCE WEATHER. Generally poor. Conditions are better during mid-morning and evening, but are never good.

4. TERMINAL WEATHER. Port Moresby, New Guinea. Fair. Ceilings less than 300 feet and/or visibility restrictions are usually due to low-level cloud cover and precipitation. Thunderstorms occur on 2-7 days per month. Occasionally, gale force winds (23 knots or greater) can be expected.

5. EXPOSURE WEATHER. Weather in the lowlands is hot and humid with frequent rain. Mountain weather is cloudy and foggy with cooler temperatures and considerable rainfall.

<u>PORT MORESBY, NEW GUINEA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	96	97	98	96	96	96
Mean Maximum	87	89	89	88	88	87
Mean Minimum	76	77	76	76	76	76
Absolute Minimum	69	70	69	69	70	65
MEAN PRECIPITATION (INCHES)	1.9	4.4	7.0	7.6	6.6	4.2
MEAN NUMBER OF DAYS						
Precipitation	6	9	15	14	15	9
Thunderstorms	4	2	3	5	6	2

6. PARADROP WEATHER. Unfavorable due to a high frequency of winds greater than 13 knots, heavy cloud cover, and precipitation.

7. ASTRONOMICAL DATA. Port Moresby, New Guinea. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0517	0523	0539	0552	0554	0553
Last Light	1834	1849	1901	1859	1846	1829

(Prepared: 12 September 1979)

MAY - OCTOBER

1. GENERAL. During the southeast monsoon season terrain influences the climate. The northeastern slopes of mountains have their rainy season, while the southwestern slopes have a dry season. Conditions near sea level are partly cloudy, hot, and humid with occasional rain showers or thunderstorms. Areas higher in the mountains are usually cloudy and cool with frequent heavy rains. Sea level temperatures range from morning lows in the low 70's (F) to afternoon highs in the 80's or low 90's. In general, the northern slopes of the mountains experience more cloudiness, rainfall, and thunderstorms than the southern slopes. The mean number of days per month with thunderstorms ranges from near zero on the southern coast to 10-20 in the northern river valleys.

2. FLYING WEATHER. Variable due to the very mountainous terrain. Flying conditions on the coasts are usually good; but conditions in the mountains and northern river valleys can be extremely poor due to cloudiness, rain, and thunderstorms. The mountain slopes are frequently obscured by clouds. Heavy aircraft icing can be expected above the freezing level.

3. RECONNAISSANCE WEATHER. Poor. Conditions occasionally improve during the evening, but are never good.

4. TERMINAL WEATHER. Port Moresby, New Guinea. Good. Ceiling/visibility less than 300 feet and/or 1 mile is rare. Thunderstorms occur on 1-7 days per month. Gale force winds (28 knots or greater) occur occasionally during September and October.

5. EXPOSURE WEATHER. Weather in the lowlands is hot and humid with occasional rain. Mountain weather is cool, cloudy, and foggy with frequent heavy rain.

<u>PORT MORESBY, NEW GUINEA</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	94	91	90	90	94	94
Mean Maximum	85	84	82	82	83	85
Mean Minimum	76	75	74	73	74	75
Absolute Minimum	70	64	66	66	66	68
MEAN PRECIPITATION (INCHES)	2.5	1.3	1.1	0.7	1.0	1.4
MEAN NUMBER OF DAYS						
Precipitation	6	5	4	4	6	5
Thunderstorms	3	1	2	2	4	7

6. PARADROP WEATHER. Unfavorable due to winds greater than 13 knots in the lowlands and heavy cloud cover and precipitation in the mountains.

7. ASTRONOMICAL DATA. Port Moresby, New Guinea. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0555	0601	0606	0600	0545	0527
Last Light	1820	1821	1828	1831	1829	1827

SITUATION CLIMATIC BRIEFS

PART C

ASIA

SITUATION CLIMATIC BRIEFS - PART C

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* Only season available.

(Prepared: 30 May 1979)

SITUATION CLIMATIC BRIEF

AFGHANISTAN

NOVEMBER - JANUARY

1. GENERAL. The weather is cloudy, foggy, snowy, and cold. Skies are clear 30-55 percent; partly cloudy, 20-25 percent; cloudy, 15-25 percent; and overcast, 5-20 percent of the time. Cloudiness reaches a maximum during December and January. Precipitation occurs during 5-13 days per month, usually in the form of light snowfall. Precipitation frequency and intensity is greatest in northeastern Afghanistan. In the western desert region, temperatures reach a maximum in the low 70's (F) in the afternoon and a minimum in the low 30's at night. At northeastern locations temperatures are in the high 50's in the afternoon and the low teen's at night. Temperatures of -50F have occurred at some mountain locations. Gusty surface winds in excess of 16 knots are expected approximately 5 percent of the time. Gale force winds are rare.

2. FLYING WEATHER. Fair to good. The percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles averages 15-45 percent; less than 1500/3, 5-20 percent of the time. The mountain locations of northern Afghanistan have the highest frequency of low ceiling/visibility; mountains are frequently obscured by clouds.

3. RECONNAISSANCE WEATHER. Fair to good. The mean number of days that the sky cover is less than 2/8 and the visibility is equal to or greater than 2.5 miles ranges from 10 to 20 days. Generally, reconnaissance weather is poorest in northeastern Afghanistan. Early morning or late evening hours are the most favorable regardless of location.

4. TERMINAL WEATHER. Kabul International Airport. Cloudy, cold, snowy, and foggy. Precipitation occurs during 5-7 days per month, usually in the form of light snow showers. The ceiling/visibility is less than 300/1, 5-15 percent of the time. Gusty surface winds in excess of 16 knots are expected less than 5 percent of the time; gale force winds are rare. Runway crosswinds in excess of 15 knots are expected 1-3 percent of the time.

5. EXPOSURE WEATHER. Cold and wet. Temperatures may be bitterly cold at some mountain locations.

<u>KABUL INTERNATIONAL</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>
TEMPERATURE (F)			
Absolute Maximum	75	66	66
Mean Maximum	58	46	42
Mean Minimum	39	29	19
Absolute Minimum	25	15	-14
MEAN PRECIPITATION (INCHES)	1.0	1.0	1.0
MEAN NUMBER OF DAYS			
Precipitation	5	7	6
Snowfall	1	4	5
Thunderstorms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 60 percent of the time in extreme northern Afghanistan and 85-95 percent in the rest of Afghanistan. Unfavorable weather conditions are generally due to low cloudiness and precipitation.

7. ASTRONOMICAL DATA. Kabul, Afghanistan. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>
First Light	0559	0624	0633
Last Light	1716	1712	1733

(Prepared: 14 February 1979)

FEBRUARY - APRIL

1. GENERAL. The weather ranges from snowy and cold in February to cool and rainy in April. Mean cloudiness averages 35-70 percent. Temperatures increase steadily. Migratory low-pressure systems moving through the area may bring extensive cloudiness and moderate to heavy precipitation. Precipitation occurs during 5-20 days per month, primarily in the form of snow in February and March. Blowing dust occurs during 1-8 days per month in the southern portion of the country. Thunderstorms occur 1-7 days per month with the highest frequency in the Kabul area.

2. FLYING WEATHER. Generally good. Ceiling/visibility greater than or equal to 1500 feet/3 miles occurs 70-80 percent of the time in February; 85-95 percent of the time in April and May. Ceiling/visibility greater than or equal to 5000/6 is even more common. Severe turbulence and icing occur in the vicinity of thunderstorms. Orographic turbulence occurs over the mountain ranges.

3. RECONNAISSANCE WEATHER. Fair to good. The mean number of days with sky cover less than 2/8 and visibility greater than or equal to 2.5 miles ranges from 12-14 days during the afternoon to 7-10 days during the morning hours. Rain shower and thunderstorm clouds are common during spring. These clouds dissipate after nightfall.

4. TERMINAL WEATHER. Kabul International Airport. Snowy and cold in February to warm and rainy in April. Temperatures increase steadily from February to April. Visibilities are generally good, occasionally falling below 2.5 miles. The major obstruction to vision is early morning fog which should lift or clear by afternoon. Visibilities generally improve in April. Ceiling/visibility less than 300/1 occurs approximately 15 percent of the time in February and March decreasing to 3 percent in April. Precipitation is expected on 10-16 days per month, occurring as snow 6 days in February and 1-2 days in March and April. Thunderstorms are expected during 2 days in February and 6-7 days per month during the rest of the season. Heavy rainfall and gusty winds should be expected during a thunderstorm. Gusty surface winds are expected on 1-5 days each month. Gale force winds are rare. Runway crosswinds exceed 15 knots 1 percent of the time in February, 2-3 percent in March and April.

5. EXPOSURE WEATHER. Cold temperatures with snowfall in February and March, warming temperatures with increased rainfall and development of thunderstorm activity as April approaches.

KABUL, AFGHANISTAN

	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)			
Absolute Maximum	65	73	80
Mean Maximum	44	55	64
Mean Minimum	23	34	42
Absolute Minimum	-7	12	28
MEAN PRECIPITATION (INCHES)	2	3	4
MEAN NUMBER OF DAYS			
Precipitation	5	5	6
Snowfall	6	2	*
Thunderstorms	*	2	7

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 80-85 percent of the time. Conditions are better in the late afternoon. The major restrictions are low cloud and poor visibilities.

7. ASTRONOMICAL DATA. Kabul, Afghanistan. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0612	0540	0457
Last Light	1802	1826	1851

(Prepared: 30 May 1979)

MAY - OCTOBER

1. GENERAL. The weather is hot, very dry, windy, and dusty. Light rain showers occur during May, but during the rest of the season, rainfall is virtually non-existent at most locations. Maximum daytime temperatures are frequently in excess of 100F, but during the night temperatures drop to the mid 40's to mid 50's (F). This is the period of the wind of 120 days, a hot, dry wind that blows almost incessantly from mid-May to mid-October with the strongest winds occurring in the afternoon. Gusty surface winds in excess of 15 knots are expected 50-60 percent of the time during the afternoon hours at some locations. Blowing sand and/or dust may obstruct visibility and make travel uncomfortable. Skies are clear 30-55 percent; partly cloudy, 30-45 percent; cloudy, 10-25 percent; and overcast, 1-5 percent of the time.

2. FLYING WEATHER. Generally good. The western half of Afghanistan is virtually cloud free. Skies in the eastern sector are usually partly cloudy to cloudy. The percentage frequency of ceiling/visibility less than 5000 feet and/or 6 miles is approximately 5 percent. Ceiling/visibility less than 1500/3 is rare. Early morning fog may restrict visibility for short periods. Visibility may be restricted by blowing sand/dust but rarely goes below 3 miles. Gusty surface winds and blowing sand/dust can be expected at most locations. Orographic turbulence occurs over the mountain ranges.

3. RECONNAISSANCE WEATHER. Generally good. The mean number of days with the sky cover less than 2/8 and visibility equal to or greater than 2.5 miles ranges from 20 to 29 days.

4. TERMINAL WEATHER. Kabul International Airport. Hot, dry, and windy. Light rainfall is expected during 10 days in May, but averages 1-3 days per month for the rest of the season. Rainfall is usually associated with a thunderstorm. Ceiling/visibility less than 300/1 is rare. Early morning fog may restrict

visibility for short periods. Winds greater than 15 knots are expected 10-25 percent of the time; gale force winds, 1-3 percent with the highest frequency in the afternoon. Runway crosswinds greater than 15 knots are expected 5-15 percent of the time. Visibility may be obstructed by blowing sand and/or dust.

5. EXPOSURE WEATHER. Hot, dry, and dusty. Temperatures over 100F are expected daily at most locations. Blowing sand/dust may make outdoor activities uncomfortable to personnel and damaging to equipment.

<u>KABUL INTERNATIONAL AIRPORT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	90	95	98	97	93	89
Mean Maximum	74	86	88	89	84	73
Mean Minimum	47	53	58	56	48	39
Absolute Minimum	30	36	39	35	33	25
MEAN PRECIPITATION (INCHES)	1.1	0.1	0.3	0.1	0.1	0.1
MEAN NUMBER OF DAYS						
Precipitation	10	2	3	1	1	2
Thunderstorms	6	2	2	2	1	2

6. PARADROP WEATHER. Favorable 60-80 percent of the time. Weather conditions are better in the early morning and late evening hours. The major restriction is winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Kabul, Afghanistan. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0423	0410	0422	0447	0510	0533
Last Light	1916	1937	1935	1908	1826	1745

(Prepared: 1 March 1979)

SITUATION CLIMATIC BRIEF

CAMBODIA

NOVEMBER - APRIL

1. **GENERAL.** This is the season of the northeast monsoon or dry season. Light rainfall, decreased cloudiness, frequent low visibility, and cooler temperatures are typical of the weather in this area. In northern Cambodia, temperatures in the mid 60's (F) in the early morning hours increase to the mid 80's in the afternoon. Temperatures are slightly warmer in the south. Rain occurs during 3-16 days per month at most locations. Rain is heavier and more frequent along the coast. Thunderstorms are expected on 1 day per month. Rain and thunderstorms increase significantly during April as the southwest monsoon begins to take effect. Low cloudiness and/or visibility occurs frequently during the early morning hours, but usually lifts or clears by 1200 local.

2. **FLYING WEATHER.** Generally good. The cloud ceiling is equal to or greater than 5000 feet 85-95 percent of the time in the morning and early afternoon hours and 65-85 percent in the late afternoon hours. The ceiling is less than 1000 feet 5-10 percent of the time in the early morning hours. Cloudiness increases in April, primarily at 2000 feet and above. Flying activities may be restricted during the early morning hours due to low cloudiness and/or fog. The weather usually lifts or clears by 1200 local at all locations.

3. **RECONNAISSANCE WEATHER.** Generally good. The mean number of days with total cloud cover of 2/8 or less and visibility of 2.5 miles or greater ranges from 5-15 days in the early morning hours to 10-20 days in the late afternoon. Generally, the late afternoon hours are more favorable for aerial reconnaissance, but this could vary widely from location to location.

4. **TERMINAL WEATHER.** Phnom Penh, Cambodia. Warm with light rainfall and early morning low cloudiness and fog. The ceiling is less than 1000 feet approximately 5 percent of the time in the early morning hours. The weather usually lifts or clears by 1200 local. The visibility is less than 2.5 miles approximately 1 percent of the time. Visibility below 1 mile is rare. On the average, visibility is restricted by fog on approximately 5 days per month.

5. **EXPOSURE WEATHER.** Warm and humid with occasional rainfall and thunderstorms.

<u>PHNOM PENH, CAMBODIA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	94	95	97	98	102	105
Mean Maximum	86	86	88	91	93	95
Mean Minimum	74	71	71	72	74	76
Absolute Minimum	62	58	55	59	66	64
MEAN PRECIPITATION (INCHES)	5.5	1.7	0.3	0.4	1.4	3.1
MEAN NUMBER OF DAYS						
Precipitation	10	3	1	1	3	6
Thunderstorms	6	1	1	1	4	9

6. **PORT/BEACH CONDITIONS.** Gusty winds in excess of 16 knots are expected 10-15 percent of the time on the open sea. Gale force winds are expected approximately 1 percent of the time. Amphibious landing craft and/or small boats may encounter rough seas 2-4 percent of the time from November-February and 1 percent in March-April.

7. ASTRONOMICAL DATA. Phnom Penh, Cambodia. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0535	0549	0602	0600	0547	0528
Last Light	1756	1802	1818	1829	1832	1834

(Prepared: 21 March 1979)

MAY - OCTOBER

1. GENERAL. This is the season of the southwest monsoon or rainy season. Cloudiness, high temperatures, high humidity, and frequent rainfall characterize the weather for this area. Morning temperatures in the mid 70's (F) increase to the upper 80's and low 90's during the afternoon. The Cardamon Mountains of southwest Cambodia form a barrier to the monsoonal flow, resulting in excessive amounts of precipitation on the windward slopes and decreased amount in the northwestern and central parts of Cambodia. Precipitation is expected 12-20 days per month at most locations, and 23-29 days per month on the wettest windward mountain slopes. Thunderstorms are expected during 4-12 days per month in northern Cambodia, varying to 11-25 days per month on the windward mountain slopes of the southwest. May has the highest frequencies of thunderstorms. Low cloudiness occurs most frequently during the early afternoon hours, except along the southwestern mountains where low cloudiness is common at all hours.

2. FLYING WEATHER. Generally fair to good except along the southwestern mountains where it is generally poor. The cloud ceiling at most locations except the southwest mountains is equal to or greater than 5000 feet 85-95 percent of the time during the early morning and early evening hours, decreasing to 55-75 percent during the early afternoon. The ceiling is less than 1000 feet 5-25 percent of the time during the nighttime and early morning hours. Cloudiness is greatest in May, primarily at and above 2000 feet. Flying activities may be restricted during the early afternoon hours due to thunderstorms. Ceilings less than 2000 feet and thunderstorms are common at all hours along the southwest mountains.

3. RECONNAISSANCE WEATHER. Generally poor. The mean number of days with the total cloud cover $\frac{2}{8}$ or less and visibility 2.5 miles or greater ranges from 0-4 days at all hours.

4. TERMINAL WEATHER. Phnom Penh, Cambodia. Cloudy, hot, and humid with early afternoon low cloudiness and thunderstorms. The ceiling is less than 1000 feet about 10 percent of the time during the nighttime and the early morning hours. The peak cloudiness and thunderstorm frequency occur during the early afternoon. Visibility is less than 2.5 miles during the early evening approximately 1-3 percent of the time. Visibility below 1 mile is rare except in heavy rain showers.

5. EXPOSURE WEATHER. Hot and humid with frequent rainfall and thunderstorms.

PHNOM PENH, CAMBODIAMAY JUN JUL AUG SEP OCTTEMPERATURE (F)

Absolute Maximum	102	101	99	100	96	97
Mean Maximum	93	91	90	90	88	87
Mean Minimum	76	76	76	76	76	76
Absolute Minimum	69	70	68	68	70	63

MEAN PRECIPITATION (INCHES)	5.7	5.8	6.0	6.1	8.9	9.9
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MEAN NUMBER OF DAYS

Precipitation	17	16	17	18	20	18
Thunderstorms	17	10	9	11	10	10

6. PORT/BEACH CONDITIONS. Gusty winds in excess of 16 knots are expected 10-20 percent of the time on the open sea. Gale force winds are expected less than 1 percent of the time. Amphibious landing craft and/or small boats may encounter rough seas 2-5 percent of the time from May-July and 2 percent in August-October.

7. ASTRONOMICAL DATA. Phnom Penh, Cambodia. (Date as of the 15th/local standard time)

CIVIL TWILIGHTMAY JUN JUL AUG SEP OCT

First Light	0515	0513	0521	0528	0529	0528
Last Light	1839	1848	1851	1842	1822	1803

(Prepared: 12 November 1981)

SITUATION CLIMATIC BRIEF

DIEGO GARCIA

ANNUAL

1. GENERAL. Except for a shift in prevailing wind direction, Diego Garcia is scarcely affected by the annual north-south migration of the Intertropical Convergence Zone (ITCZ). There is little annual variation in cloud cover, diurnal temperatures, humidity, or rainfall. Mean cloudiness varies from 40 to 80 percent. Mean daily maximum temperatures fall in the mid to upper 80's (F), with mean daily minimums in the upper 70's. The average relative humidity is high at 80-85 percent. Rainfall is abundant with heavy rain showers occurring on about 15-20 days per month. Thunderstorms, however, are rare. From January through March, the prevailing wind is from the west to northwest at 8-12 knots; from May through November, winds are from the southeast; December and April are transitional months. Tropical storms, while infrequent, may threaten the island during December-February.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 12-35 percent of the time; less than 1500/3, 3-15 percent; and less than 500/1, rarely. Rain showers are numerous.

3. RECONNAISSANCE WEATHER. Poor due to extensive cloud cover. Sky cover of 2/8 or less occurs on less than 10 days per month, although the visibility is seldom less than 3 miles.

4. TERMINAL WEATHER. Good. Ceiling/visibility less than 300/1 is very rare. The only restrictions to ceilings and visibilities occur during heavy rain showers. Runway crosswinds greater than 15 knots (runway 130-310) occur 1-3 percent of the time, most frequently during the afternoon.

5. EXPOSURE WEATHER. Hot and humid with frequent heavy rain showers.

DIEGO GARCIA	JAN	FEB	MAR	APR	MAY	JUN
TEMPERATURE (F)						
Absolute Maximum	91	90	93	91	91	95
Mean Maximum	86	86	88	87	86	84
Mean Minimum	77	77	78	78	77	76
Absolute Minimum	73	73	72	73	70	70
MEAN PRECIPITATION (INCHES)	12.8	8.9	6.5	6.6	6.7	5.9
MEAN NUMBER OF DAYS						
Precipitation	21	20	16	15	16	16
Thunderstorms	1	1	1	1	*	*
	JUL	AUG	SEP	OCT	NOV	DEC
TEMPERATURE (F)						
Absolute Maximum	88	88	88	90	90	91
Mean Maximum	83	83	83	84	86	87
Mean Minimum	75	75	75	76	76	77
Absolute Minimum	70	66	70	68	70	72
MEAN PRECIPITATION (INCHES)	6.2	6.2	9.2	10.9	8.9	7.0
MEAN NUMBER OF DAYS						
Precipitation	18	16	17	22	16	15
Thunderstorms	*	*	*	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Good December through May with conditions favorable for paratroops 65-90 percent of the time. Poor June through November due to strong winds; favorable conditions occur during this period 35-70 percent of the time. Brief, heavy rain showers can hamper paratroops.

7. ASTRONOMICAL DATA. Diego Garcia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0542	0553	0555	0551	0551	0556
Last Light	1857	1856	1846	1830	1822	1824
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0610	0557	0542	0526	0519	0526
Last Light	1830	1811	1827	1824	1830	1845

(Prepared: 27 October 1980)

SITUATION CLIMATIC BRIEF

IRAN

NOVEMBER - JANUARY

1. GENERAL. Winter is cold and partly cloudy. Temperatures vary greatly from south to north and with elevation. Morning lows average 20-35F in the mountains and inland areas and 45-60F along the coast. Afternoon highs range from 40-70F. Temperatures decrease to the north. Temperatures less than 32F occur 4-30 days per month and temperatures greater than 90F occur occasionally along the coast. Mean sky cover ranges from 30-60 percent with a maximum along the coast. The number of cloudy days exceeds that of clear days in northern portions of the country and near high well-exposed mountain slopes. Precipitation averages 1-3 inches except at isolated stations along the Caspian coast where up to 11 inches have been recorded in a single month. Mountain areas receive more precipitation than low-lying areas. Precipitation occurs during 2-10 days per month with snowfall occurring during 1-7 days. Thunderstorms occur 1-2 days per month. Visibility is generally good. Visibility less than 6 miles occurs on 1-4 days per month except along the coast where it increases to 20 days per month. Visibility less than 2.5 miles averages 1-2 days per month. Primary restrictions to visibility are blowing sand and/or dust and early morning fog. Winds greater than 17 knots occur 1-5 days per month; gale force winds on approximately 1 day. Over southern Iran in winter, severe clear-air turbulence in the vicinity of the jet stream is a hazard. It also occurs at low levels along the Arabian Gulf coast associated with infrequent northwest winter shamal winds following a cold frontal passage.

2. FLYING WEATHER. Generally good. The percentage frequency of the ceiling/visibility being less than 5000 feet and/or 5 miles is 10-35 percent; less than 1500/3, 5-10 percent. Cloudiness is heaviest over northern Iran and along the Caspian Sea shores. Icing occurs over the northern mountains. Turbulence associated with the jet stream occurs over all of Iran but is particularly severe over the southern half of the country. Dust/sand storms may restrict flying activities. Fog occurs along the Caspian Sea and in mountain areas.

3. RECONNAISSANCE WEATHER. Generally good. The mean number of days with the total cloud cover less than 2/8 and visibility 2.5 miles or greater occurs 10-20 per month. Cloudiness is heaviest over northern Iran and along the coast.

4. TERMINAL WEATHER. Tehran, Iran. Cold and windy. Temperatures are in the low 30's near dawn; they are in the mid 40's and low 50's in the afternoon. Winds equal to or greater than 17 knots are expected approximately 5 percent of the time; gale force winds, 1 percent. Precipitation is expected on 5-7 days per month with snowfall expected on 1-3 of these days. Ceiling/visibility less than 300/1 is expected approximately 1 percent of the time.

5. EXPOSURE WEATHER. Warm and sunny in the Arabian Gulf to snowy and bitterly cold in the mountains.

<u>TEHRAN, IRAN</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>
TEMPERATURE (F)			
Absolute Maximum	84	68	65
Mean Maximum	63	51	45
Mean Minimum	43	33	27
Absolute Minimum	19	10	-5
MEAN PRECIPITATION (INCHES)	0.8	1.2	1.8
MEAN NUMBER OF DAYS			
Precipitation	5	7	6
Thunderstorms	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Generally good. The percentage frequency of occurrence of favorable conditions ranges from 70 to 90 percent. The primary weather restrictions are high winds and poor visibility due to blowing dust and/or sand.

7. ASTRONOMICAL DATA. Tehran, Iran. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>
First Light	0613	0638	0646
Last Light	1725	1721	1742

(Prepared: 27 October 1980)

FEBRUARY - APRIL

1. GENERAL. The weather ranges from cold and snowy in the far north and mountainous regions to warm and humid along the Arabian Gulf coast. Skies are clear to partly cloudy 50-65 percent of the time over most of Iran. Precipitation is expected on 5-10 days per month usually as light rain showers. On rare occasions heavy rainfall may occur and cause flash flooding. Snow occurs at most locations; the heaviest snowfall occurs in the mountains. Snow avalanches are a hazard in the mountainous areas, particularly between Tehran and the Caspian Sea. Gusty winds can be expected at most locations, but are most prevalent in the central plateau region. At Kerman the winds exceed 25 knots 15 percent of the time. Sandstorms and/or dust storms occur 5-10 days per month in the interior and can be severe enough to remove paint from cars and frost windows. Severe earthquakes are also a hazard. Infrequent northwest winter shamal winds following cold frontal passages in the Arabian Gulf reach gale force for 24-36 hours or as long as 3-5 days in February-March.

2. FLYING WEATHER. Generally good. The percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles ranges from 10-25 percent; less than 1500/3 ranges from 1-10 percent. Flying activities may be restricted during the the early morning hours due to low clouds and/or fog and also sandstorms/dust storms in the interior. Severe clear-air turbulence associated with shamal winds is a hazard over southern Iran. It also occurs in the vicinity of the jet stream and at low levels along Arabian Gulf coast.

3. RECONNAISSANCE WEATHER. Generally favorable. The mean number of days with cloud cover 2/8 or less and visibility 2.5 miles or greater ranges from 10-20. The percentage frequency of cloud cover 2/8 or less ranges from 35-55 percent over most of Iran. Generally, the late evening and early morning hours are the most favorable for aerial reconnaissance. April is the cloudiest month. The Arabian Sea coastal area has the lowest frequency of cloudiness.

4. TERMINAL WEATHER. Tehran, Iran. Clear to partly cloudy skies, a general warming trend, and an occasional rain or snow shower. Precipitation occurs 6-7 days per month. Snowfall is expected on 2 days in February and is rare in other months. Gusty winds greater than 16 knots are expected 5 percent of the time; gale force winds, 1 percent. Runway crosswinds in excess of 15 knots are expected 5-10 percent of the time and are the strongest from 1200-2100 hours local. Ceiling/visibility less than 300/1 occurs 1-3 percent of the time.

5. EXPOSURE WEATHER. Warm and humid in the extreme south, cool with possible dust storms/sandstorms in the interior, cold and snowy in the mountainous areas. Sandstorms/dust storms may be hazardous to personnel and damaging to equipment. Heavy flooding can be caused by heavy rainfall or heavy melting snow runoff from the mountains.

<u>TEHRAN, IRAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	73	79	90
Mean Maximum	51	59	71
Mean Minimum	32	40	49
Absolute Minimum	12	22	32
<u>MEAN PRECIPITATION (INCHES)</u>	1.1	1.1	1.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	5	7	7
Snowfall	2	*	0
Thunderstorms	*	1	2
Dust Storms	*	1	2

* = less than 0.5 day

6. PARADROP WEATHER. Varies widely from location to location. The percentage frequency of favorable weather varies from 40-95 percent over all of Iran. Generally, the afternoon hours are the least favorable for paradrops. Primary weather restriction is winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Tehran, Iran. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0652	0617	0533
Last Light	1746	1812	1837

(Prepared: 4 November 1980)

MAY - OCTOBER

1. GENERAL. Hot, dry, windy, and rainless. Temperatures along the Arabian Gulf coast and the southern interior reach daily maximums of 100-120F. Locations in the north and along the Caspian Sea reach daily maximums of 85-100F. Except for the Caspian Sea area, all of Iran reports less than 0.5 inch of rainfall per month. Many locations report no rain at all. Skies are virtually cloudless 70-80 percent of the time. June through the middle of July is dominated by the shamal. This wind blows down the valley of the Tigris and Euphrates Rivers across western Iran creating almost a constant dust/sandstorm problem which may last several days. Winds from the northwest across the Seistan Valley (approximately 31N, 61E) during May through September cause frequent dust storms. This phenomenon is called the wind of 120 days. Both these wind systems are dry and the result of the dominant thermal low-pressure system over the Arabian Gulf during the summer months. These winds are strongest during daytime (sometimes as

high as 60 knots), but usually weaken to a breeze at night. Wind speeds of 25 knots or greater are reported 5-15 percent of the time over most of Iran.

2. FLYING WEATHER. Generally good. The percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles ranges from 5-10 percent; less than 1500/3, approximately 1 percent of the time. Flying activities may be restricted by high winds and/or sandstorms/dust storms.

3. RECONNAISSANCE WEATHER. Generally good. The percentage frequency that the cloud cover is less than 2/8 is 80-95 percent. The visibility is less than 2.5 miles 1-5 percent of the time over most of Iran. Generally, the late evening or early morning hours are the most favorable for aerial reconnaissance. Sandstorms/dust storms may lower the visibility during the afternoon hours.

4. TERMINAL WEATHER. Tehran, Iran. Hot, windy, and virtually rainless and cloud free. During the hottest months, the daily maximum temperatures are in the high 90's and reach 110F on rare occasions. Rainfall is expected on 6 days in May and on 1-2 days the rest of the months. Ceiling/visibility less than 300/1 is rare. Gusty surface winds greater than 16 knots are expected 10-20 percent of the time for June through August and 5 percent in other months. Gale force winds are rare. Runway crosswinds greater than 15 knots are expected approximately 1 percent of the time.

5. EXPOSURE WEATHER. Hot, dry, and dusty over most of Iran. Temperatures may exceed 120F in the interior desert regions. Sandstorms/dust storms are frequent and may last for several days.

<u>TEHRAN, IRAN</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	97	103	108	107	100	89
Mean Maximum	81	92	97	95	88	76
Mean Minimum	59	67	72	71	64	53
Absolute Minimum	37	48	57	52	51	38
<u>MEAN PRECIPITATION (INCHES)</u>	0.5	*	*	*	*	*
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	6	1	1	*	*	2
Thunderstorms	2	1	*	*	*	*

* = less than 0.5 day of 0.05 inch

6. PARADROP WEATHER. Favorable 75-95 percent of the time over most of Iran. However, in southern Iran, from approximately 31N southward, during the afternoon hours, weather conditions are favorable only 35-45 percent of the time. Over all of Iran weather conditions are unfavorable primarily due to winds in excess of 13 knots. Generally, only in northern Iran, particularly long the Caspian Sea is cloudiness and/or rainfall a factor.

7. ASTRONOMICAL DATA. Tehran, Iran. (Date as of the 15th/local standard time of the Meridian 52 Deg 30 Min E)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0432	0418	0430	0456	0521	0545
Last Light	1931	1952	1950	1922	1838	1756

(Prepared: 9 November 1979)

SITUATION CLIMATIC BRIEF

IRAQ

NOVEMBER - APRIL

1. GENERAL. The climate of most of Iraq is arid. The winter and spring months are generally mild, partly cloudy, and have meager precipitation. The exception is the northeast mountains where winters are cool to cold, and moderately cloudy with considerable precipitation, frequently falling as snow. Mean cloudiness ranges from 15 to 50 percent at the lower elevations, and 50 to 70 percent over the higher terrain. Precipitation occurs on an average of 7-12 days per month at northern locales and 1-3 days over the remainder of Iraq. Afternoon temperatures range from the 50's to 80's (F) and the morning lows range from the 30's to the 50's, with December and January the coldest months. The exception is in the higher mountains where temperatures drop to the teens. Freezing temperatures occur as early as November and as late as April. Thunderstorms occur on 1-3 days per month. Surface winds are northwesterly and generally light.

2. FLYING WEATHER. Generally good, except fair to good in northern locations, particularly during the morning. Ceilings less than 5000 feet occur 1-40 percent of the time; visibility less than 6 miles, 3-15 percent of the time. The potential for aircraft icing is considerable over the northern areas. Clear-air turbulence is a hazard near the jet stream.

3. RECONNAISSANCE WEATHER. Generally fair to good. The least favorable conditions occur in the northern regions during the late morning and afternoon. The mean number of days with cloud cover less than or equal to 2/8 and visibility equal to or greater than 3 miles is 5-20 days per month.

4. TERMINAL WEATHER. Baghdad, Iraq. Generally good. The ceiling/visibility less than 300 feet/1 mile occurs 1-14 percent of the time. Low ceilings/visibilities occur most frequently in December and January due to dust or fog during the late morning.

5. EXPOSURE WEATHER. The northern mountains are cold and cloudy with occasional snowfall. The remainder of the country is partly cloudy and cool to warm with infrequent precipitation.

<u>BAGHDAD, IRAQ</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	95	81	80	82	96	105
Mean Maximum	75	63	59	65	73	83
Mean Minimum	51	45	38	43	49	58
Absolute Minimum	30	19	21	28	34	44
<u>MEAN PRECIPITATION (INCHES)</u>	0.8	1.0	0.9	0.9	0.9	0.6
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	2	2	2	3	2	3
Thunderstorms	2	1	1	1	2	3

6. PARADROP WEATHER. Favorable 55-93 percent of the time. The least favorable area is the northern mountains. Unfavorable conditions also occur in the lowlands during the afternoon due to gusty winds.

7. ASTRONOMICAL DATA. Baghdad, Iraq. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0607	0631	0640	0622	0549	0508
Last Light	1727	1724	1744	1812	1835	1858

(Prepared: 4 March 1980)

MAY - OCTOBER

1. GENERAL. Characterized by hot temperatures, little precipitation, and almost cloudless skies. Mean afternoon temperatures range from the high 80's (F) to low 100's. Mean lows range from 55-80F. Maximum cloudiness (10-40 percent) and precipitation occur in May and October. The visibility is generally good, however, restrictions occur with dust and sandstorms, particularly with the shamal. The shamal is a sand or dust-laden northwesterly wind that persists from 1-5 days. Mirages and shimmer often impair visibility, particularly during summer afternoons. Gale force winds are rare.

2. FLYING WEATHER. Good. The least favorable conditions occur over the central plains due to reduced visibilities. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 2-55 percent of the time; less than 1500/3, 1-30 percent. Thunderstorms are infrequent, occurring on an average of 3 days during May, less in other months. Clear air, convective, orographic, and jet stream associated turbulence are frequent hazards.

3. RECONNAISSANCE WEATHER. Fair to good. The least favorable conditions occur in May over northeastern locales due to cloud cover. Sky cover 2/8 or less and visibility 3 miles or greater occur on 10-30 days per month.

4. TERMINAL WEATHER. Baghdad, Iraq. Generally good. Ceiling or visibility less than 300/1 occurs 1-7 percent of the time. The lowest conditions are experienced during June and July due to blowing sand and dust. Crosswinds greater than 15 knots occur 1-6 percent of the time.

5. EXPOSURE WEATHER. Dusty, dry, and very hot during the day; however, in the high mountains conditions are fairly comfortable.

<u>BAGHDAD, IRAQ</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	118	119	123	121	117	108
Mean Maximum	94	104	109	110	103	92
Mean Minimum	68	76	80	79	72	63
Absolute Minimum	47	63	70	69	56	48
MEAN PRECIPITATION (INCHES)	0.4	*	*	*	*	0.1
MEAN NUMBER OF DAYS						
Precipitation	1	*	*	*	1	1
Thunderstorms	3	*	0	0	*	1

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Unfavorable over the central plains 40-75 percent of the time during the late morning and afternoon due to winds in excess of 13 knots. Otherwise, conditions are favorable 60-95 percent of the time.

7. ASTRONOMICAL DATA. Baghdad, Iraq. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0436	0424	0435	0458	0521	0542
Last Light	1922	1942	1941	1915	1835	1755

(Prepared: 13 February 1980)

SITUATION CLIMATIC BRIEF

JORDAN

NOVEMBER - APRIL

1. **GENERAL.** Partly cloudy and cool to mild with occasional rainfall. Locations in northwestern Jordan have about 1 day with snowfall during February. Monthly precipitation amounts are light, 3-5 inches in the northwestern mountains and generally less than an inch elsewhere. Mean cloudiness varies from 10-55 percent depending upon location and time of day. Early afternoon is usually the cloudiest time of day. Mean daily minimum temperatures during January range from the mid 30's to high 40s (F) with the warmest temperatures occurring in the southern Rift Valley. Maximum temperatures in January are in the mid to high 50's. By April the temperatures have increased to the low 70's to low 80's. Surface winds greater than 17 knots occur on as many as 13 days per month, usually during the early afternoon. Thunderstorms are infrequent.

2. **FLYING WEATHER.** Usually good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-35 percent of the time in the northwest, but generally less than 10 percent elsewhere. Ceilings less than 1500 feet may occur up to 15 percent of the time on the eastern mountain slopes. Migratory lows from the Mediterranean Sea occasionally affect this area, creating conditions suitable for in-cloud icing and turbulence. Thunderstorms can be expected on 1 day or less per month.

3. **RECONNAISSANCE WEATHER.** Fair during the afternoon but generally good at other hours. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 8-25 days per month.

4. **TERMINAL WEATHER.** Amman, Jordan. Good. Conditions are partly cloudy with occasional rainfall. Ceilings less than 300 feet may occur 2-5 percent of the time around sunrise. Runway crosswinds greater than 15 knots occur 1-7 percent of the time.

5. **EXPOSURE WEATHER.** Usually comfortable. Temperatures are cool to mild, but below-freezing temperatures are fairly common from December through February.

<u>AMMAN, JORDAN</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	91	77	81	85	90	103
Mean Maximum	70	59	54	56	60	73
Mean Minimum	50	42	39	40	43	49
Absolute Minimum	27	25	21	19	26	34
MEAN PRECIPITATION (INCHES)	1.3	1.8	2.7	2.9	1.2	0.6
MEAN NUMBER OF DAYS						
Precipitation	5	7	11	10	5	3
Thunderstorms	1	1	1	*	1	1

* = less than 0.5 day

6. **PARADROP WEATHER.** Generally good except for gusty early afternoon winds. Conditions are suitable for paratroops 55-95 percent of the time.

7. **ASTRONOMICAL DATA.** Amman, Jordan. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	01 08	01 01	01 01	0554	0523	0443
Last Light	17 03	17 00	17 02	1747	1808	1830

(Prepared: 25 February 1980)

MAY - OCTOBER

1. GENERAL. Summer weather in Jordan is hot, dry, and dusty. The skies are frequently cloudless, and precipitation is virtually nonexistent. Except for May and October, mean cloudiness is generally less than 10 percent, and frequently less than 5 percent. Morning minimum temperatures are in the 50's (F) and 60's except for the southern Rift Valley where they are in the mid 70's. Afternoon maximum temperatures range from the upper 80's and lower 90's at higher elevations to the low 100's at low elevations and desert locations. Gusty winds during the afternoon cause localized visibility restrictions due to blowing dust or sand. Thunderstorms are very rare.

2. FLYING WEATHER. Excellent. Ceilings less than 5000 feet may occur up to 10 percent of the time at Al Mafraq in northwestern Jordan, but are rare elsewhere. The only significant visibility restriction occurs locally during the afternoon with blowing sand or dust. The most significant hazard is thermal turbulence during the afternoon. This may be moderate to severe in the lower levels and extend to as high as 15,000 feet.

3. RECONNAISSANCE WEATHER. Very good. Conditions are suitable for aerial reconnaissance almost every day.

4. TERMINAL WEATHER. Amman, Jordan. Very good. Skies are generally clear and visibility is unrestricted except for occasional dust. Runway crosswinds greater than 15 knots occur up to 11 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Hot, windy, and dry during the afternoon, although nighttime temperatures are relatively cool.

<u>AMMAN, JORDAN</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	105	109	106	109	106	99
Mean Maximum	83	87	89	90	88	81
Mean Minimum	57	61	65	65	62	57
Absolute Minimum	39	45	50	54	48	41
MEAN PRECIPITATION (INCHES)	0.2	0.0	0.0	0.0	0.1	0.2
MEAN NUMBER OF DAYS						
Precipitation	1	0	0	0	*	2
Thunderstorms	1	*	0	*	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Generally good except that it may deteriorate during the afternoon hours due to surface winds in excess of 13 knots. Some locations have favorable paradrop weather as little as 30 percent of the time during the afternoon.

7. ASTRONOMICAL DATA. Amman, Jordan. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0412	0401	0413	0434	0455	0514
Last Light	1853	1911	1911	1846	1807	1729

(Prepared: 21 January 1980)

SITUATION CLIMATIC BRIEF

KOREA

NOVEMBER - MARCH

1. GENERAL. The northeast monsoon dominates the weather pattern over the Korean peninsula producing nearly cloudless skies, cold temperatures, and scant precipitation. Mean cloudiness ranges from 30 to 55 percent, except at southwestern regions where cloudiness ranges from 40 to 80 percent in midwinter. Mean precipitation amounts are generally less than 3 inches with precipitation occurring on 5-12 days per month. Almost all winter precipitation falls as snow, except in the extreme south. However, the snow is mainly light with little accumulation except in northern mountain valleys where blizzard conditions occur. Mean high temperatures in January, the coldest month, range from 10F in the north to 43F in the south. Mean lows, from north to south, are -20F to +29F. Visibility is generally good, except when restricted by snow, morning valley fog, and smoke/haze from industrial centers. The highest incidence of fog occurs in the western regions. Gale force winds occur infrequently, however, strong winds do occur with cold fronts and at exposed locations, particularly along the northern coast of the northeast highland.

2. FLYING WEATHER. Good, especially at interior locations during the afternoon and evening. The least favorable conditions occur in the morning at west and southwest locales due to low ceilings and visibilities. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-50 percent of the time; 1500/3, 1-15 percent. Thunderstorms occur on an average of 1 day or less per month. Moderate to severe turbulence occurs over higher terrain, with cold fronts and at high levels near the jet stream.

3. RECONNAISSANCE WEATHER. Fair to good. The most suitable conditions occur at interior locations. The least favorable time is in the morning over western and southern areas due to cloud cover and low visibilities. Sky cover 2/8 or greater occurs on 10-25 days.

4. TERMINAL WEATHER. Kimpo/Seoul, ROK. Partly cloudy skies, cold temperatures, and infrequent precipitation. A high incidence of low clouds and visibilities with frequent fog occur during the morning to early afternoon. The percentage frequency of ceiling or visibility less than 300/1 ranges from 2 to 7 percent. Runway crosswinds greater than 15 knots occur 1-2 percent of the time.

5. EXPOSURE WEATHER. Moderately cold in the lowlands of the south. Cold to bitterly cold in the north and higher elevations, where the greatest incidence of snowfall and snow cover also occur.

<u>KIMPO/SEOUL, ROK</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>					
Absolute Maximum	70	61	60	60	68
Mean Maximum	52	38	32	37	47
Mean Minimum	35	23	16	21	31
Absolute Minimum	13	-5	-7	-3	11
<u>MEAN PRECIPITATION (INCHES)</u>	1.3	1.1	1.1	1.2	1.8
<u>MEAN NUMBER OF DAYS</u>					
Precipitation	6	6	6	5	6
Snowfall	*	2	4	2	1
Thunderstorms	*	*	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 40-85 percent of the time. The least favorable conditions occur in the morning at southwest and southern areas due to low ceilings and visibilities. Unfavorable conditions also occur in the afternoon at all locations due to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Kimpo/Seoul, ROK. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0643	0710	0718	0656	0619
Last Light	1750	1744	1806	1838	1905

(Prepared: 25 March 1980)

APRIL - MAY

1. GENERAL. Spring is the transition season between the dry winter monsoon and wet summer monsoon. The weather is characterized by increasing cloudiness, precipitation, and moderate temperatures. The highest incidence of cloudiness and precipitation occurs over the southern regions. Precipitation occurs on an average of 4-12 days with mean amounts of 1-6 inches. Mean high temperatures range from the 50's (F) in the north to the 70's in the south. Lows range from near 30 in the north to the 50's in the south. Visibility is generally good, except for concentrations of morning valley fog, sea fog in western regions, and smoke/haze near industrial centers. Surface winds are generally light, but gale force winds may occur in exposed mountainous regions, particularly in North Korea.

2. FLYING WEATHER. Generally good. However, low ceilings or visibilities occur frequently during the morning hours at western and southern regions. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-45 percent of the time; 1500/3, 5-15 percent. Thunderstorms occur on an average of 2 days or less except at northwestern locations during May where an average of 4 thunderstorm days occur. Turbulence is a frequent hazard over and to the lee of mountainous terrain and near the jet stream.

3. RECONNAISSANCE WEATHER. Fair to good. The least favorable conditions occur at southwestern and southern regions due to cloud cover or restricted visibilities during the morning. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 10-23 days per month.

4. TERMINAL WEATHER. Kimpo/Seoul, ROK. Partly cloudy to cloudy skies, cool to warm temperatures, and occasional precipitation. The highest incidence of low ceilings or restricted visibilities occurs during the morning. Ceilings or visibilities less than 300/1 occur 1 percent of the time. Runway crosswinds greater than 15 knots occur 3-4 percent of the time.

5. EXPOSURE WEATHER. Cool and humid in the lowlands and moderately cold and less humid in the north and at higher elevations. Freezing temperatures occur at night during early spring.

KIMPO/SEOUL, ROK**APR****MAY****TEMPERATURE (F)**

Absolute Maximum
Mean Maximum
Mean Minimum
Absolute Minimum

81
62
43
25

86
72
54
39

MEAN PRECIPITATION (INCHES)

4.4

3.8

MEAN NUMBER OF DAYS

Precipitation
Thunderstorms

8
1

7
1

6. **PARADROP WEATHER.** Favorable 40-85 percent of the time. The least favorable conditions occur during the morning at southern locations due to low ceilings or visibilities. Unfavorable conditions may also occur during the afternoon and early evening due to gusty winds in excess of 13 knots.

7. **ASTRONOMICAL DATA.** Seoul, ROK. (Date as of the 15th/local standard time)

CIVIL TWILIGHT**APR****MAY**

First Light
Last Light

0532
1934

0455
2003

(Prepared: 11 February 1980)

JUNE - SEPTEMBER

1. **GENERAL.** The southwest monsoon dominates the weather pattern over Korea with widespread cloudiness, precipitation, and warm to hot temperatures. Precipitation occurs on an average of 10-20 days during July, the wettest month, and on 5-12 days during September, the driest month. Mean rainfall amounts range from near 20 inches at southern locations in July to 2-4 inches at northeastern regions in September. Average daytime high temperatures in July and August, the warmest months, range from near 90F at southern interior locations to the 70's at northeast coastal regions. Nighttime lows in the south range from the 60's to 70's (F) and in the north from the 40's to near 60F. Visibility is fair to good, except for restrictions which occur with concentrations of morning valley fog, sea fog advected over western regions, and smoke/haze near industrial centers. Surface winds are generally light; however, infrequent gale force winds occur at exposed regions in mountainous terrain. The rare occurrences of weakening typhoons and tropical storms affect the western and southern coast producing high winds and torrential rains.

2. **FLYING WEATHER.** Fair to poor. However, by the end of September the summer monsoon has weakened and the flying weather improves. The least favorable conditions occur during the morning in western and southern locations and over mountainous terrain which is frequently obscured by clouds. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-75 percent of the time; 1500/3, 5-50 percent. Thunderstorm occurrences range from an average of 5-9 days over northwestern and northern regions to 4 days or less elsewhere. Turbulence is a frequent hazard near and over higher terrain, over flatlands on hot afternoons, and near the jet stream.

3. **RECONNAISSANCE WEATHER.** Poorest in July, poor to fair in June and August, and fair to good in September. The most suitable conditions occur during the late afternoon and night over northern interior locations. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 4-18 days.

4. TERMINAL WEATHER. Kimpo/Seoul, ROK. Cloudy skies, warm temperatures, and frequent precipitation. Low ceilings and visibilities with frequent fog are experienced during the morning hours. Ceiling and visibility less than 300 feet/1 mile occurs about 5 percent of the time. Runway crosswinds greater than 15 knots occur about 1 percent of the time.

5. EXPOSURE WEATHER. Warm and humid over much of the peninsula, with the highest temperatures occurring at interior regions. However, milder and less humid conditions prevail over the northeastern regions and the mountains of the north; here, morning low temperatures drop below freezing in late September.

<u>KIMPO/SEOUL, ROK</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
<u>TEMPERATURE (F)</u>				
Absolute Maximum	96	97	101	91
Mean Maximum	78	83	86	77
Mean Minimum	62	71	72	60
Absolute Minimum	50	57	59	42
<u>MEAN PRECIPITATION (INCHES)</u>	7.3	15.8	10.3	--
<u>MEAN NUMBER OF DAYS</u>				
Precipitation	10	15	12	9
Thunderstorms	2	3	3	2

6. PARADROP WEATHER. Favorable 45-85 percent of the time. The most favorable conditions occur in the evening and late at night. The least favorable conditions occur in the morning in western and southern regions due to low ceilings, low visibilities, and during the afternoon with winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Seoul, ROK. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0439	0452	0519	0547
Last Light	2026	2024	1954	1908

(Prepared: 20 February 1980)

OCTOBER

1. GENERAL. October is the transition month between the wet summer and dry winter monsoon seasons. The weather is characterized by moderate temperatures and a significant decrease in cloudiness and precipitation. The maximum cloud cover occurs over the extreme southeast region of the peninsula. Precipitation occurs on an average of 4-10 days, but mean amounts are low, i.e., 1-3 inches. Snow occurs on 1-3 days and is generally confined to the northernmost regions during the latter part of the month. Mean high temperatures are in the 60's (F) in the south and 50's in the north. Mean lows range from the low 50's in the south to near 30F at northern interior locations. Visibility is generally good; however, restrictions occur with morning valley fog, smoke, and haze near industrial centers. The greatest incidence of fog occurs in central and southeast interior regions. Surface winds are generally light.

2. FLYING WEATHER. Generally good; however, poor conditions occur during the morning due to low ceilings and visibilities, particularly in central and southeast interior regions. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time; 1500/3, 2-15 percent. Thunderstorms occur on an average of 2 days or less. Turbulence is a hazard near and over higher terrain and near the jet stream.

3. RECONNAISSANCE WEATHER. Fair to good. The least favorable conditions occur during the morning to early afternoon due to a higher incidence of cloudiness and reduced visibilities, particularly over the central to southern regions. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 15-22 days.

4. TERMINAL WEATHER. Kimpo/Seoul, ROK. Partly cloudy skies, cool temperatures, and infrequent rainfall. The highest incidence of low ceilings or restricted visibilities occurs between 0600 and 0800 hours local. Ceiling/visibility less than 300/1 occurs 7 percent of the time. Runway crosswinds greater than 15 knots occur less than 1 percent of the time.

5. EXPOSURE WEATHER. Cool and moderately humid over much of the peninsula. However, nighttime and early morning temperatures at northern locations and high terrain drop to well below freezing.

<u>KIMPO/SEOUL, ROK</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>	
Absolute Maximum	82
Mean Maximum	66
Mean Minimum	46
Absolute Minimum	27
 <u>MEAN PRECIPITATION (INCHES)</u>	 2.2
 <u>MEAN NUMBER OF DAYS</u>	
Precipitation	6
Thunderstorms	1

6. PARADROP WEATHER. Favorable 65-90 percent of the time. The least favorable conditions occur in the late morning and afternoon due to an increase in the frequency of winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Kimpo/Seoul, ROK. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>OCT</u>
First Light	0613
Last Light	1823

(Prepared: 12 May 1980)

SITUATION CLIMATIC BRIEF

KUWAIT

NOVEMBER - APRIL

1. **GENERAL.** The winter weather in Kuwait is partly cloudy and mild. Migratory lows occasionally bring a day or two of cloudy weather with light rain, but total rainfall amounts are small. Measureable rainfall occurs on only 1-2 days per month. Mean cloudiness is 25-40 percent. Mean daily maximum temperatures are in the 60's and 70's (F) and climb to 90F by April. Minimum temperatures are in the 40's and 50's. Surface winds greater than 16 knots occur on 2-7 days per month, and gale force winds on 1-2 days per month during January through April. The prevailing direction is northwesterly. Blowing sand and dust restricts visibility on 6-21 days per month.

2. **FLYING WEATHER.** Fair to good. Ceilings less than 5000 feet occur 5-10 percent of the time, but visibilities less than 6 miles occur as often as 50 percent. Ceilings less than 1500 feet and 500 feet are infrequent. Visibility less than 3 miles occurs 5-10 percent of the time; less than 1 mile, 1-6 percent, usually in blowing sand or dust. Thermal turbulence is not as frequent as during the summer months, but may occur occasionally, especially during April. Thunderstorms are infrequent, but occur during 2 days in April.

3. **RECONNAISSANCE WEATHER.** Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 11-22 days per month.

4. **TERMINAL WEATHER.** Kuwait International Airport. Generally good. Conditions are partly cloudy with infrequent light rain. Ceilings less than 300 feet are rare. Fog occurs on 1-4 days per month, but the chief restriction to visibility is blowing sand or dust. Visibility less than 1 mile occurs 1-6 percent of the time. Runway crosswinds greater than 15 knots occur 3-15 percent of the time during the afternoon.

5. **EXPOSURE WEATHER.** Generally mild except during April, when it becomes hot. Blowing sand and dust may make conditions uncomfortable during the afternoon.

<u>KUWAIT INTERNATIONAL AIRPORT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	97	88	82	91	100	108
Mean Maximum	79	68	66	70	79	90
Mean Minimum	55	48	46	46	55	64
Absolute Minimum	34	32	32	30	37	52
MEAN PRECIPITATION (INCHES)	0.1	0.9	0.8	0.3	0.7	0.7
MEAN NUMBER OF DAYS						
Precipitation	1	2	1	1	1	2
Thunderstorms	1	1	0	1	*	2

* = less than 0.5 day

6. **PARADROP WEATHER.** Fair during the afternoon due to gusty surface winds; good at other times. Conditions are favorable 35-60 percent of the time during the afternoon, and 50-90 percent during the remainder of the day.

7. **ASTRONOMICAL DATA.** Kuwait International Airport. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0546	0608	0618	0603	0535	0458
Last Light	1719	1718	1737	1802	1820	1838

(Prepared: 12 May 1980)

MAY - OCTOBER

1. GENERAL. The weather in Kuwait during the summer months is hot, dry, cloudless, and windy. Mean cloudiness, except during May and October is generally less than 10 percent. Temperatures in excess of 100F occur almost every afternoon. Morning temperatures usually fall to the 70's or 80's (F). As a rule, rain does not occur in Kuwait from June through October. Afternoons are windy. Winds in excess of 16 knots may occur as often as 11 days per month, and gale force winds occur on 1-3 days per month. This results in reduced visibility in blowing sand or dust. The prevailing wind direction is generally northwesterly.

2. FLYING WEATHER. Fair to good. Ceiling restrictions are rare, but the visibility is reduced to less than 6 miles, 15-50 percent of the time; less than 3 miles, 5-25 percent; and less than 1 mile up to 8 percent of the time. Blowing sand or dust is the primary restriction to visibility. Moderate to severe thermal turbulence can be expected during late morning and afternoon as the ground heats up. This extends as high as 15,000 feet. Thunderstorms are rare.

3. RECONNAISSANCE WEATHER. Generally good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 18-29 days per month. The poorest reconnaissance conditions occur during the afternoon.

4. TERMINAL WEATHER. Kuwait International Airport. Generally good. Skies are mostly clear, but the visibility may be restricted to less than 1 mile in dust up to 8 percent of the time. Runway crosswinds greater than 15 knots occur 3-14 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Extreme heat, dryness, wind, and dust combine to make conditions uncomfortable for personnel. Equipment may be adversely affected as well.

<u>KUWAIT INTERNATIONAL AIRPORT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	120	118	120	120	115	108
Mean Maximum	102	111	113	113	106	97
Mean Minimum	73	81	82	81	73	64
Absolute Minimum	61	72	73	72	63	52
MEAN PRECIPITATION (INCHES)	*	0.0	0.0	0.0	0.0	0.0
MEAN NUMBER OF DAYS						
Precipitation	*	0	0	0	0	0
Thunderstorms	.1	0	*	0	0	0

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Fair to poor during the afternoon due to gusty winds, but fair to good at other times. Conditions are suitable 20-60 percent of the time during the afternoon and 65-95 percent at night.

7. ASTRONOMICAL DATA. Kuwait International Airport. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0430	0421	0432	0451	0508	0526
Last Light	1859	1915	1915	1854	1817	1741

(Prepared: 9 June 1981)

SITUATION CLIMATIC BRIEF

LAOS

DECEMBER - FEBRUARY

1. GENERAL. The weather during winter is pleasant in comparison to the remainder of the year. There is little precipitation, decreased cloudiness, continued hot temperatures, and lower humidity. Mean cloudiness ranges from 25 to 45 percent. Mean minimum temperatures range from 55F to 70F; mean maximum temperatures are 80F to 90F. Relative humidity averages 45-60 percent. Thunderstorms and gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-40 percent of the time; less than 1500/3, 20-30 percent of the time; and less than 500/1 rarely occurs.

3. RECONNAISSANCE WEATHER. Fair to good. Cloud cover of 2/8 or less and visibility of 3 miles or greater occurs on 15 or more days per month at most stations.

4. TERMINAL WEATHER. Vientiane, Laos. Good. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time.

5. EXPOSURE WEATHER. Except for continued hot temperatures, the weather is quite pleasant, especially as compared to other seasons in Laos.

<u>VIENTIANE, LAOS</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	95	95	100
Mean Maximum	83	83	87
Mean Minimum	59	58	63
Absolute Minimum	41	37	46
<u>MEAN PRECIPITATION (INCHES)</u>	0.1	0.3	0.6
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	1	1	2
Thunderstorms	0	0	1

6. PARADROP WEATHER. Good. Weather conditions are favorable over 90 percent of the time with little variation during the day.

7. ASTRONOMICAL DATA. Vientiane, Laos. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0609	0621	0615
Last Light	1800	1817	1833

(Prepared: 13 April 1981)

MARCH - MAY

1. GENERAL. Spring is a time of transition between the northeast monsoon (November to mid-March) and the southwest monsoon (mid-May to September). The northeast monsoonal weather is relatively cool, dry, and cloudless, while the

southwest monsoon has heavy and frequent precipitation, high humidities, maximum cloudiness, and high temperatures. There is, therefore, a slow but steady deterioration of weather conditions during the first part of the spring which becomes rapid and marked with the onset of the southwest monsoon (normally about mid-May). Mean cloud cover varies from 30 to 60 percent in March and April; it increases to 70-80 percent in May. Mean daily minimum temperatures range from 60F to 75F. Maximums range from 90F to 100F. Precipitation falls as heavy, continuous rain. Thunderstorms are frequent. Surface winds of 15-25 knots are common, but rarely reach gale force (28 knots or greater).

2. FLYING WEATHER. Generally poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-70 percent of the time; less than 1500/3, 10-20 percent; and less than 500/1, 2-5 percent.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 1-15 days per month. Early morning hours during the first part of the season are most favorable.

4. TERMINAL WEATHER. Vientiane, Laos. Good. However, thunderstorms and/or heavy precipitation with accompanying gusty winds frequently make conditions poor. This is especially true of the latter part of the season.

5. EXPOSURE WEATHER. Hot and humid with frequent heavy rains. Flash flooding is common, especially along the major rivers and their tributaries.

<u>VIENTIANE, LAOS</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	104	108	102
Mean Maximum	91	93	90
Mean Minimum	67	72	75
Absolute Minimum	52	57	63
<u>MEAN PRECIPITATION (INCHES)</u>	1.4	3.8	10.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	5	8	16
Thunderstorms	8	13	17

6. PARADROP WEATHER. Conditions are favorable 70-95 percent of the time. Early morning hours are best.

7. ASTRONOMICAL DATA. Vientiane, Laos. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0557	0532	0514
Last Light	1841	1848	1858

(Prepared: 13 April 1981)

JUNE - AUGUST

1. GENERAL. Summer has heavy and frequent precipitation, maximum cloudiness, and high temperatures. Precipitation usually occurs as heavy, continuous rain. Mean cloud cover varies from 70 to 90 percent. Mean daily minimum temperatures range from 70F to 80F. Mean maximums vary from 85F to 95F. Thunderstorms are frequent, usually between 1400 and 1800 LST. Gale force winds (28 knots or greater) occur infrequently throughout the area and are principally associated with thunderstorms or tropical cyclones.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-60 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1, 1-5 percent. Frequent cloud cover, precipitation, thunderstorms, and turbulence in and near thunderstorms make the weather poor. Low-level turbulence is common over the plains and lowlands. This type of turbulence is caused by surface heating and reaches its peak during the afternoon.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on less than 5 days per month.

4. TERMINAL WEATHER. Vientiane, Laos. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. However, frequent thunderstorms with gusty winds and heavy rain can make takeoffs and landings hazardous.

5. EXPOSURE WEATHER. Hot and humid with frequent heavy rains. Flash flooding is common, especially along the major rivers and their tributaries.

<u>VIENTIANE, LAOS</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	100	97	98
Mean Maximum	89	87	87
Mean Minimum	76	75	75
Absolute Minimum	66	64	64
MEAN PRECIPITATION (INCHES)	11.6	10.1	12.8
MEAN NUMBER OF DAYS			
Precipitation	18	19	20
Thunderstorms	13	13	13

6. PARADROP WEATHER. Fair to good. Conditions are favorable 60-90 percent of the time. Late afternoon (1400-1800 LST) is unfavorable due to frequent thunderstorms and associated winds greater than 13 knots.

7. ASTRONOMICAL DATA. Vientiane, Laos. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0510	0518	0529
Last Light	1910	1913	1859

(Prepared: 9 June 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. The northeast monsoon usually lasts through the end of September. The month of September has heavy and frequent precipitation, maximum cloudiness, and high temperatures. The months of October and November are drier and less cloudy, although temperatures remain high. Precipitation during September is mostly in the form of heavy, nearly continuous rain. Precipitation during October and November is usually in the form of showers. Mean cloud cover is 60-80 percent in September, 40-70 percent in October and November. Mean daily minimum temperatures are 65F to 75F throughout the season, with maximums of 85F to 95F. Mean relative humidities are 60-95 percent. Thunderstorms are frequent in September and October, rare in November. Gale force winds are rare.

2. FLYING WEATHER. Good. However, gusty surface winds combined with heavy rains can make takeoffs and landings hazardous at times. This occurs most frequently in September. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-55 percent of the time; less than 1500/3, 15-30 percent; and less than

500/1, less than 5 percent of the time. Low-level turbulence is common both in the outside clouds due to differential heating of the surface. This turbulence reaches its maximum during the afternoon hours.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on less than 5 days in September, less than 15 days per month in October and November.

4. TERMINAL WEATHER. Vientiane, Laos. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. The frequent rain in September makes landing on a wet runway likely. Decreased braking action combined with frequent thunderstorms and accompanying gusty winds can make takeoffs and landings hazardous. Weather conditions gradually improve through the autumn.

5. EXPOSURE WEATHER. Hot and humid. There is heavy rain in September and frequent thunderstorms in both September and October. The heavy rains in September can lead to flash flooding, especially along major rivers and their tributaries.

<u>VIENTIANE, LAOS</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	100	97	99
Mean Maximum	87	87	85
Mean Minimum	74	71	66
Absolute Minimum	63	55	43
<u>MEAN PRECIPITATION (INCHES)</u>	12.1	4.1	0.8
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	17	8	2
Thunderstorms	12	5	1

6. PARADROP WEATHER. Fair in September. Good in October and November. Conditions are favorable 75 percent of the time in September; conditions improve to about 90 percent favorable in October and November. Frequent precipitation is the main weather factor for paratroops during September.

7. ASTRONOMICAL DATA. Vientiane, Laos. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0536	0541	0552
Last Light	1834	1810	1756

(Prepared: 29 September 1980)

SITUATION CLIMATIC BRIEF

LEBANON AND ISRAEL

NOVEMBER - APRIL

1. GENERAL. Winter in Lebanon and Israel is cool, cloudy, and rainy. Morning temperatures are usually in the 40's and low 50's (F). Afternoon temperatures are mostly between 60F and 70F. Temperatures in the higher mountains of Lebanon are somewhat lower. Intense low pressure systems moving through the area can cause extensive cloudiness. Heavy rains, hail, gale force winds, and heavy flooding occur in low lying areas. Heavy snowfall can be expected in mountains of Lebanon above 2500 feet.

2. FLYING WEATHER. Generally good along the coast and fair to poor in the hill and mountain locations. Fog is frequent and occurs mostly during the night and early morning hours. The percentage frequency of the ceiling/visibility less than 5000 feet and/or 6 miles ranges from 10 to 35 percent; less than 1500/3, 10-30 percent in the mountain regions to less than 5 percent in the coastal regions; less than 500/1 is rare. Icing and thunderstorms occur when low pressure or frontal systems affect the area. The associated turbulence is often severe.

3. RECONNAISSANCE WEATHER. Generally good along the coast and fair to poor in the mountain locations. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 5-15 days per month. The poorest conditions occur during the afternoon.

4. TERMINAL WEATHER. Beirut International Airport. Generally good. The percentage frequency of ceiling/visibility less than 300 feet/1 mile is less than 2 percent. Runway crosswinds greater than 15 knots occur 3-9 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Generally cool and rainy, but can become cold and unpleasant when cold fronts move through the area. In the mountains of Lebanon, temperatures fall below freezing and heavy snowfalls occur. The weather at Tel Aviv is similar to that at Beirut; however, Tel Aviv receives less precipitation than Beirut.

<u>BEIRUT INTERNATIONAL AIRPORT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	91	84	77	87	97	99
Mean Maximum	73	65	62	63	66	72
Mean Minimum	61	55	51	51	54	58
Absolute Minimum	41	30	31	30	36	43
MEAN PRECIPITATION (INCHES)	5.2	7.3	7.5	6.2	3.7	2.2
MEAN NUMBER OF DAYS						
Precipitation	9	13	15	14	11	6
Thunderstorms	4	3	3	3	2	1

6. PARADROP WEATHER. Fair due to gusty surface winds and precipitation. Conditions are suitable 20-50 percent of the time during the afternoon and 55-75 percent at night.

7. ASTRONOMICAL DATA. Beirut International Airport. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0543	0608	0616	0558	0525	0443
Last Light	1702	1658	1719	1747	1810	1834

(Prepared: 29 September 1980)

MAY - OCTOBER

1. GENERAL. The weather in Lebanon and Israel during the summer months is usually clear, hot, dry, and windy. Average cloudiness is 20-40 percent. Afternoon temperatures are in the 80's and low 90's. Morning temperatures usually fall between 60F and 75F. In northern Lebanon at higher elevations temperatures are lower; afternoon temperatures are in the 60's and low 70's and morning temperatures are considerably lower. Rainfall is sparse. Afternoons are windy. Wind speeds vary between 7-16 knots with a prevailing westerly wind direction. Visibilities are generally good except for early morning fog along the coast.

2. FLYING WEATHER. Fair to good. Cloud ceilings are rare, but the visibility is reduced to less than 6 miles 15-50 percent of the time; less than 3 miles, 5-15 percent. Visibility less than 1 mile rarely occurs. Fog is the primary restriction to visibility. Thunderstorms are rare in summer.

3. RECONNAISSANCE WEATHER. Generally good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 18-28 days per month. The poorest conditions occur during the early morning hours.

4. TERMINAL WEATHER. Beirut International Airport. Generally good. Skies are mostly clear. Visibility is rarely restricted to less than 1 mile. The weather at Tel Aviv is similar to that at Beirut; however, Tel Aviv has an average of 3-6 days with early morning haze/smoke.

5. EXPOSURE WEATHER. Heat, dryness, and wind combine to make conditions uncomfortable for personnel. Equipment may also be adversely affected.

<u>BEIRUT INTERNATIONAL AIRPORT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	107	104	98	99	99	101
Mean Maximum	78	83	87	89	86	81
Mean Minimum	64	69	73	74	73	69
Absolute Minimum	46	56	64	62	60	52
MEAN PRECIPITATION (INCHES)	0.7	0.1	*	*	0.2	2.0
MEAN NUMBER OF DAYS						
Precipitation	3	1	1	1	1	4
Thunderstorms	1	*	*	0	1	2

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Fair during the afternoon due to gusty winds, but generally good at other times. Conditions are suitable 20-60 percent of the time during the afternoon and 65-95 percent at night.

7. ASTRONOMICAL DATA. Beirut International Airport. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0410	0358	0409	0433	0456	0517
Last Light	1859	1919	1918	1852	1810	1730

(Prepared: 11 April 1979)

SITUATION CLIMATIC BRIEF

NORTH & SOUTH YEMEN

NOVEMBER - MAY

1. GENERAL. The weather is warm, humid, windy, and dusty. Temperatures range from the high 60's (F) in the morning hours to the mid 80's in the afternoon. Skies are clear 5-20 percent, partly cloudy 60-70 percent, cloudy 10-30 percent, and overcast less than 5 percent of the time. Rainfall is generally very light averaging less than 1-3 days per month. Thunderstorms are rare. Gusty surface winds in excess of 16 knots are expected 5 percent of the time. Gale force winds are rare. Generally, gusty winds are more frequent along the Red Sea coast. Visibility is obscured by blowing sand and/or dust 5-15 percent of the time with the highest incidence occurring in March.

2. FLYING WEATHER. Generally good. Cloud ceilings are less than 5000 feet 15-45 percent of the time in early morning hours and 5-10 percent in the afternoon. January and February are the cloudiest months. The percentage frequency of ceiling/visibility less than 1500 feet/3 miles is less than 5 percent. Turbulence can be expected over the mountains and desert regions particularly in the afternoon hours.

3. RECONNAISSANCE WEATHER. Generally poor in the early morning hours due to heavy cloudiness. The mean number of days with cloud cover 2/8 or less and the visibility 3 miles or greater ranges from 5-10 days in the early morning hours to 15-20 days in the afternoon hours.

4. TERMINAL WEATHER. Aden, South Yemen. Warm, humid, and dusty. Normally, rainfall is very light and varies widely from year to year. However, rainfall exceeding 2-3 inches has occurred in a 24-hour period. Ceiling/visibility less than 300/1 is expected less than 1 percent of the time. Visibility is restricted by blowing sand and/or dust on 5-10 days per month. Thunderstorms are rare.

5. EXPOSURE WEATHER. Warm and humid with blowing sand and dust. Sandstorms and dust storms are uncomfortable for personnel and damaging to equipment.

<u>ADEN, SOUTH YEMEN</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)							
Absolute Maximum	97	93	92	91	98	102	107
Mean Maximum	85	81	80	81	84	88	93
Mean Minimum	75	73	73	73	75	78	82
Absolute Minimum	61	59	56	61	58	66	70
MEAN PRECIPITATION (INCHES)	0.1	0.1	0.2	0.1	0.2	*	*
MEAN NUMBER OF DAYS							
Precipitation	1	2	3	1	1	1	*
Thunderstorms	0	0	0	*	*	*	*

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Poor to fair. Conditions are favorable 50-70 percent of the time. Conditions are unfavorable during the afternoon hours due primarily to winds in excess of 13 knots.

7. PORT/BEACH CONDITIONS. The Red Sea area is windy and sea conditions are rougher than those found in the Gulf of Aden. In the Red Sea area gusty winds in excess of 16 knots are expected 30-50 percent of the time and gale force winds 5-10 percent during the period. Gusty wind conditions decrease substantially in May. Amphibious landing craft and/or small boats could encounter rough seas 10-25 percent of the time from November-April and 5 percent in May. In the Gulf of Aden, gusty winds are expected 15-20 percent of the time from November-April

and 5 percent in May; gale force winds 1 percent during all months. Amphibious landing craft and/or small boats could encounter rough seas approximately 5 percent of the time during all months.

8. ASTRONOMICAL DATA. Aden, South Yemen. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0536	0550	0603	0601	0547	0526	0512
Last Light	1753	1759	1815	1828	1832	1834	1840

(Prepared: 11 April 1979)

JUNE - OCTOBER

1. GENERAL. The weather is hot, rainless, windy, and dusty along the coast. In the mountains of North Yemen, rainfall averages 1-3 inches per month. Rain occurs on only 1 day per month at most coastal location and 7-10 days per month in the mountains. Skies are clear 20-30 percent, partly cloudy 45-60 percent, cloudy 20-30 percent, and overcast approximately 1 percent of the time. Visibility is obstructed by blowing dust and/or sand on 15-30 days per month in South Yemen; however, the visibility is rarely below 1 mile. Gusty surface winds in excess of 16 knots are expected 5-10 percent, gale force winds less than 1 percent of the time. Gusty winds reach their maximum frequency in June and July.

2. FLYING WEATHER. Generally good. Cloud ceilings are less than 5000 feet 5-10 percent of the time; less than 1500 feet, approximately 1 percent. The visibility is less than 3 miles 5-10 percent of the time primarily due to blowing sand and/or dust. Turbulence is expected to occur over the mountain and desert regions, particularly in the afternoon hours.

3. RECONNAISSANCE WEATHER. Generally poor in the early morning hours due to heavy cloudiness. The mean number of days when clouds are 2/8 or less and the visibility is 3 miles or greater ranges from 5-10 days in the morning to 15-25 days in the afternoon. Aerial reconnaissance weather improves substantially in October.

4. TERMINAL WEATHER. Aden, South Yemen. Hot, dry, and very dusty. The temperature exceeds 110F approximately 5 days per month. The visibility is obstructed by blowing sand or dust 50 percent of the time in June, 75 percent in July, 40 percent in August, 5 percent in September, and approximately 1 percent in October; however, the visibility is rarely less than 1 mile. Early morning fog is expected approximately 1 percent of the time during all months. Precipitation and/or thunderstorms are expected on less than 2 days per month.

5. EXPOSURE WEATHER. Hot and dry with blowing sand or dust. Dust storms are severe at times. Sandstorms and/or dust storms are uncomfortable for personnel and damaging to equipment.

<u>ADEN, SOUTH YEMEN</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)					
Absolute Maximum	112	109	107	105	101
Mean Maximum	95	93	92	93	90
Mean Minimum	84	83	81	83	78
Absolute Minimum	73	70	63	71	59
MEAN PRECIPITATION (INCHES)	*	0.1	*	0.1	*
MEAN NUMBER OF DAYS					
Precipitation	0	2	1	1	*
Thunderstorms	*	2	1	1	*

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Good in the late evening and early morning hours, but poor in the afternoon hours. The weather is poor in the afternoon hours due primarily to the frequency of winds in excess of 13 knots. Favorable weather occurs 70-90 percent of the time in the early morning hours and late evening hours and 30-40 percent in the afternoon hours.

7. PORT/BEACH CONDITIONS. In the Gulf of Aden coastal area, gusty surface winds in excess of 16 knots occur 10-25 percent of the time in June through August and 5-10 percent in September and October. Gale force winds are expected 1-3 percent of the time during all months. Winds are the strongest during July. There is a 5-10 percent chance of amphibious landing craft or small boats encountering rough seas. In the Red Sea area gusty winds are expected 5 percent of the time from June-September and 25 percent in October. Gale force winds are rare except for a 2 percent chance in October. Amphibious landing craft or small boats may encounter rough seas 15 percent of the time in October and 1 percent in other months.

8. ASTRONOMICAL DATA. Aden, South Yemen. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0510	0518	0527	0528	0529
Last Light	1850	1853	1843	1823	1803

(Prepared: 9 November 1981)

SITUATION CLIMATIC BRIEF

NORTH KOREA

NOVEMBER - MARCH

1. GENERAL. This is the northeast monsoon season. Cold, dry air flowing southward from Siberia results in low temperatures, scant precipitation, and little cloud cover. Mean daily maximum temperatures range from 20F to 50F. Mean daily minimum temperatures range from -20F to 30F. Almost all winter precipitation falls as light snow. Accumulations are not great, except for the northern mountain valleys where the snow is accompanied by low temperatures, strong winds, and reduced visibility. Mean cloudiness ranges from 30 to 55 percent. Visibility is generally good, except for occasional snow, morning valley fog, and smoke and haze at industrial centers. Gale force winds (28 knots or greater) occur on about 1 day per month.

2. FLYING WEATHER. Good. Ceiling/visibility less than 500 feet and/or 6 miles occurs 10-50 percent of the time; less than 1500 feet/3 miles, 1-15 percent of the time; and less than 500/1 is rare. Moderate to severe turbulence occurs frequently over higher terrain and with migratory storms.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility 3 miles of greater occur on 10-25 days per month. The most suitable conditions occur at interior locations during the afternoon and evenings.

4. TERMINAL WEATHER. Pyongyang, North Korea. Good. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 1-3 percent of the time.

5. EXPOSURE WEATHER. Conditions are bitterly cold at times, especially in the north and at higher elevations, where the greatest incidence of snowfall and snow cover occurs.

<u>PYONGYANG, NORTH KOREA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>					
Absolute Maximum	68	59	48	55	66
Mean Maximum	49	34	28	35	45
Mean Minimum	32	19	10	16	27
Absolute Minimum	+7	-9	-15	-9	+3
<u>MEAN PRECIPITATION (INCHES)</u>	1.4	0.8	0.6	0.5	1.2
<u>MEAN NUMBER OF DAYS</u>					
Precipitation	9	8	6	5	6
Snowfall	9	8	6	5	6
Thunderstorms	1	*	0	0	*

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 40-85 percent of the time. Afternoons are least favorable due to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Pyongyang, North Korea. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0650	0718	0725	0702	0623
Last Light	1752	1745	1807	1841	1909

(Prepared: 6 November 1981)

APRIL - MAY

1. GENERAL. This is a period of transition between winter's dry northeast monsoon and summer's cloudy, wet southwest monsoon. The southern regions are the cloudiest and wettest. Precipitation occurs on an average of 4-12 days per month with mean amounts ranging from 1 to 6 inches. Mean maximum temperatures range from the 50's (F) in the north to the 70's in the south. Mean minimum temperatures are near 30F in the north and in the low 50's in the south. Visibility is generally good, except for morning fog in the valleys, sea fog along the western coast, and smoke/haze near industrial centers. Surface winds are generally light, but gale force winds occasionally occur over higher terrain.

2. FLYING WEATHER. Generally good. However, low ceilings or visibilities are frequently experienced during the morning at western and southern regions. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-45 percent of the time; 1500 feet/3 miles, 5-15 percent; 500/1, 1 percent of the time or less. Thunderstorms occur on 2 days or less per month except at northwestern locations where an average of four thunderstorms occur in May. Turbulence is a frequent hazard over and to the lee of mountainous terrain and near the jet stream.

3. RECONNAISSANCE WEATHER. Fair to good. Cloud cover of 2/8 or less and visibility of 3 miles or greater occur on 10-23 days per month. The least favorable conditions occur over southwestern and southern sections of the country due to cloud cover and/or restricted visibilities during the morning.

4. TERMINAL WEATHER. Pyongyang, North Korea. Good. Ceiling/visibility less than 300/1 occurs about 1 percent of the time, usually in the morning.

5. EXPOSURE WEATHER. Temperatures are moderately cold in the north and over higher terrain. Some freezing temperatures can be expected during the first half of April. Snowfall rarely occurs in significant quantities.

PYONGYANG, NORTH KOREA	APR	MAY
TEMPERATURES (F)		
Absolute Maximum	82	90
Mean Maximum	63	75
Mean Minimum	40	52
Absolute Minimum	23	36
MEAN PRECIPITATION (INCHES)	2.7	2.0
MEAN NUMBER OF DAYS		
Precipitation	7	9
Thunderstorms	1	2

6. PARADROP WEATHER. Fair to good. Favorable conditions occur 40-85 percent of the time. Morning is the least favorable time due to low ceilings and visibilities. During the afternoon winds in excess of 13 knots can affect paradrops.

7. ASTRONOMICAL DATA. Pyongyang, North Korea. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	APR	MAY
First Light	0534	0455
Last Light	1941	2036

(Prepared: 6 November 1981)

JUNE - AUGUST

1. **GENERAL.** The southwest monsoon dominates the weather in Korea with wide-spread cloudiness, locally heavy precipitation, and warm to hot temperatures. Mean cloudiness is 60-85 percent. Mean rainfall ranges from 20 inches at southern locations in July to 3-6 inches at northeastern regions in August. Precipitation occurs on 10-20 days per month; thunderstorms occur on 3-9 days per month. Mean daily maximum temperatures are in the 80's (F) in the south and the 70's at northeast coastal regions. Mean minimum temperatures range from the 60's to 70's in the south to the 40's and 50's in the north. Visibility is fair to good except where morning valley fog, sea fog advected over western regions, and smoke/haze near industrial centers occur. Surface winds are generally light, however, gale force winds occur on occasion at exposed locations in mountainous terrain. Weakening typhoons and tropical storms affect the western and southern coast producing high winds and torrential rains.

2. **FLYING WEATHER.** Fair to poor. The frequency of ceiling/visibility less than 5000 feet and/or 6 miles ranges from 20 percent at sheltered inland locations to 75 percent of the time at windward locations in the south and west; 1500 feet/3 miles, 5-50 percent; and 500/1, 2-10 percent. Thunderstorms are frequent and often imbedded in broken or overcast clouds. Turbulence is frequent near and over higher terrain, over flatlands on hot afternoons, and near the jet stream.

3. **RECONNAISSANCE WEATHER.** Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 4-15 days per month. Frequent and persistent cloud cover hinders reconnaissance. Late afternoon and night over northern interior locations have the best conditions.

4. **TERMINAL WEATHER.** Pyongyang, North Korea. Poor. Frequent and persistent cloud cover, precipitation, and thunderstorms combine to restrict flying during this season. Ceiling/visibility less than 300/1 occurs about 5 percent of the time. Runway crosswinds greater than 15 knots occur about 1 percent of the time.

5. **EXPOSURE WEATHER.** Hot and humid with abundant rain. Occasional tropical storms, usually during August, with their high winds and torrential rains cause severe flooding and landslides.

PYONGYANG, NORTH KOREA	JUN	JUL	AUG
TEMPERATURE (F)			
Absolute Maximum	93	93	100
Mean Maximum	79	83	84
Mean Minimum	61	70	70
Absolute Minimum	50	54	37
MEAN PRECIPITATION (INCHES)	4.2	14.7	10.2
MEAN NUMBER OF DAYS			
Precipitation	9	16	13
Thunderstorms	4	6	6

6. **PARADROP WEATHER.** Fair. The weather is favorable for paradrops 45-85 percent of the time. Evening and late night are the best times. The least favorable conditions occur in western and southern portions of the country due to low ceilings and low visibilities. During the afternoon winds in excess of 13 knots make conditions unfavorable.

7. **ASTRONOMICAL DATA.** Pyongyang, North Korea. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	JUN	JUL	AUG
First Light	0438	0451	0520
Last Light	2036	2033	2001

(Prepared: 6 November 1981)

SEPTEMBER - OCTOBER

1. **GENERAL.** This is a period of transition from the warm and wet southwest monsoon season to the cold, dry northeast monsoon season. Accompanying this transition is a decrease in cloud cover and precipitation. September precipitation averages 2-7 inches and falls on 5-12 days. October is drier, with mean amounts of 1-3 inches falling in 4-10 days. Mean monthly maximum temperatures are in the 70's (F) in September, but drop to the 50's and low 60's in October. Lows are in the 40's and 50's in September, but drop to the 30's and 40's in October. Thunderstorms occur on 1-2 days per month. Gale force winds are rare.

2. **FLYING WEATHER.** Good. However, poor conditions frequently occur during the morning due to low ceilings and visibilities, particularly in southern and western regions. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-60 percent of the time; 1500 feet/3 miles, 2-20 percent; and 500/1, 1-5 percent. Thunderstorms occur on 2 days or less per month. Turbulence is a hazard experienced near and over higher terrain and near the jet stream.

3. **RECONNAISSANCE WEATHER.** Fair to good. Conditions improve as the season progresses. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 10-22 days per month. Unfavorable conditions occur periodically in the morning and early afternoon due to cloud cover and low visibilities.

4. **TERMINAL WEATHER.** Pyongyang, North Korea. Fair. The weather changes from warm to wet in early September to cool and dry by late October. Ceiling/visibility less than 300/1 occurs 1-3 percent of the time, with the highest incidence from near sunrise to midmorning.

5. **EXPOSURE WEATHER.** Warm, humid, and wet in early September becoming cool and dry by late October. Nighttime temperatures at northern locations and at high terrain drop to well below freezing by the end of October.

<u>PYONGYANG, KOREA</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)		
Absolute Maximum	90	82
Mean Maximum	77	65
Mean Minimum	58	44
Absolute Minimum	39	27
MEAN PRECIPITATION (INCHES)	4.5	1.5
MEAN NUMBER OF DAYS		
Precipitation	9	8
Thunderstorms	2	1

6. **PARADROP WEATHER.** Fair to good. The probability of favorable conditions improves from about 55 percent in early September to near 90 percent by late October. Afternoon winds in excess of 13 knots can restrict paradrop operations throughout the season. In addition, early September has a high incidence of low visibilities, particularly from sunrise until midmorning.

7. **ASTRONOMICAL DATA.** Pyongyang, North Korea. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>
First Light	0550	0618
Last Light	1913	1826

(Prepared: 23 March 1979)

SITUATION CLIMATIC BRIEF
NORTH VIETNAM/CHINA-VIETNAM BORDER
NOVEMBER - MARCH

1. GENERAL. This is the season of the northeast monsoon or dry season, a period of warm temperatures, cloudy skies, and relatively light rainfall. However, a weather phenomenon known as crachin, a prolonged spell of drizzle or light rain, very low clouds, and poor visibility occurs along the east coast of Vietnam and the south coast of China surrounding the Gulf of Tonkin. The crachin appears as early as November, becomes common in December, and reaches its maximum frequency in February and March. The crachin generally occurs over periods of 2-5 days each, but has been known to last 22 consecutive days. Rain is expected during 5-10 days per month with the mean precipitation averaging 1-2 inches. However, rain frequency and amount can vary widely from location to location, but can be heavy at times. Mean cloud cover ranges from 70-85 percent. Generally, cloud cover dissipates during the afternoon. Thunderstorms are rare during November-February but occur during 2-3 days in March. The probability of having at least one tropical storm and/or typhoon affecting the North Vietnam-South China area is 25 percent in November, 5 percent in December, and rare from January to March.

2. FLYING WEATHER. Generally poor during the early morning hours, but improves during the afternoon. The percentage frequency that the ceiling/visibility is equal to or greater than 5000 feet and/or 5 miles ranges from 45-60 percent during November-December and 15-25 percent during January-March. The percentage frequency of ceiling/visibility equal to or greater than 1000/2.5 ranges from 75-95 percent.

3. RECONNAISSANCE WEATHER. Generally poor in the morning and good in the afternoon. The mean number of days with the total cloud cover less than 3/8 and visibility equal to or greater than 2.5 miles ranges from 1-3 days in the morning and 10-15 days in the afternoon.

4. TERMINAL WEATHER. Hanoi, Vietnam. Cloudy and foggy with light rain. Cloud ceilings are less than 5000 feet 30-45 percent of the time in November-December; 65-80 percent during January-March. Ceilings are less than 1000 feet 10 percent in November-December and 20-30 percent time during January-March. Visibility less than 1 mile is excepted 5-15 percent of the time with the highest frequency of low visibility during January-March. Crachin-type weather is expected on 3 days in November, 8-12 days in December-February, and 19 days in March.

5. EXPOSURE WEATHER. Warm and humid with light, occasionally heavy rainfall. The temperatures range from the mid 50's to low 60's (F) in the early morning hours to the mid 70's to low 80's in the afternoon. Relative humidity is high, i.e., from 70-95 percent throughout the day.

<u>HANOI, VIETNAM</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>					
Absolute Maximum	94	89	92	95	98
Mean Maximum	78	72	69	69	74
Mean Minimum	65	59	57	58	63
Absolute Minimum	44	41	41	43	46
MEAN PRECIPITATION (INCHES)	2.1	0.8	0.9	1.2	1.7
<u>MEAN NUMBER OF DAYS</u>					
Precipitation	8	8	10	13	17
Thunderstorms	1	0	*	1	3
Crachin-Type Weather	3	8	11	12	19

* = less than 0.5 day

6. PARADROP WEATHER. Favorable along the Vietnam-China border 65-95 percent of the time. Generally, the area midway on the Vietnam-China border eastward to the Gulf of Tonkin has the highest frequency of poor paradrop weather, usually caused by low ceilings or precipitation lowering the visibility.

7. ASTRONOMICAL DATA. Hanoi, Vietnam. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0643	0701	0712	0705	0644
Last Light	1839	1842	1859	1917	1928

(Prepared: 23 March 1979)

APRIL - MAY

1. GENERAL. This is the transition period between the dry northeast monsoon and the rainy southwest monsoon. The weather is cloudy and rainy with an occasional violent thunderstorm accompanied by heavy rainfall and strong winds. Rainfall increases dramatically from an average of 3 inches in April to 8 inches in May. Rainfall occurs on 10-20 days per month usually in the form of moderate to heavy rain showers and/or thunderstorms. Violent thunderstorms may develop suddenly, particularly during the afternoon hours, causing very low ceilings, heavy rainfall, and strong winds which last for 1-2 hours at a particular location. Winds in excess of 50 knots and heavy hail have been recorded in these storms. Cra-chin-type weather (low ceilings and poor visibility over a large area) decreases from an average of 13 days in April to 1 day in May. The probability of tropical storms and/or typhoons affecting the area increases from 5 percent in April to 25 percent in May.

2. FLYING WEATHER. Poor to good. The percentage frequency of ceiling/visibility equal to or greater than 5000 feet/5 miles is 30 percent in April and 50 percent in May; equal to or greater than 1000/2.5 is 80 percent in April and 90 percent in May. Flying activities may be restricted due to low clouds, fog, and/or heavy rainfall. Severe turbulence generally occurs in the vicinity of thunderstorms.

3. RECONNAISSANCE WEATHER. Generally poor in the morning hours and fair in the afternoon hours. The mean number of days with total cloud cover less than 3/8 and the visibility equal to or greater than 2.5 miles ranges from 1-3 days in the morning hours to 5-10 days in the afternoon hours.

4. TERMINAL WEATHER. Hanoi, Vietnam. Warm, rainy, and cloudy. Rainfall averages 15 days in each month, usually in the form of heavy rain showers or thunderstorms. Thunderstorms are expected on 5-8 days per month, usually with low ceilings, heavy rainfall, and strong winds. The ceiling is less than 5000 feet 55 percent in April and 30 percent of the time in May. The ceiling is less than 1000 feet 10-15 percent of the time during both months. The highest percentage of low clouds occurs during the early morning hours.

5. EXPOSURE WEATHER. Warm and damp with an occasional severe thunderstorm accompanied by heavy rainfall, lightning, and strong winds.

HANOI, VIETNAMAPRMAYTEMPERATURE (F)

Absolute Maximum
Mean Maximum
Mean Minimum
Absolute Minimum

101
81
69
50

109
89
75
60

MEAN PRECIPITATION (INCHES)

3.4

7.9

MEAN NUMBER OF DAYS

Precipitation
Thunderstorms
Crachin-Type Weather

15
5
13

15
8
1

6. PARADROP WEATHER. Favorable along the Vietnam-China border 70-90 percent of the time. The weather is unfavorable due primarily to clouds and rainfall.

7. ASTRONOMICAL DATA. Hanoi, Vietnam. (Date as of the 15th/local standard time)

CIVIL TWILIGHTAPRMAY

First Light
Last Light

0616
1938

0555
1951

(Prepared: 23 March 1979)

JUNE - SEPTEMBER

1. GENERAL. This is the season of the southwest monsoon, a period of maximum cloudiness, heavy and frequent rainfall, and high temperatures. Rainfall is expected on 10-20 days per month, usually in the form of very heavy rainfall and/or thunderstorms. Thunderstorms are expected on 4-10 days per month. Gusty winds in excess of 16 knots are expected less than 5 percent of the time. Gale force winds are rare. The monthly probability of having at least one tropical storm and/or typhoon affecting this area ranges from 10-25 percent.

2. FLYING WEATHER. Poor to fair. The percentage frequency that the ceiling/visibility is equal to or greater than 5000 feet/5 miles increases from 30-60 percent in the early morning to 50-75 percent in the afternoon. The percentage frequency that the ceiling/visibility is equal to or greater than 1000/2.5 is 90-95 percent during all hours. Flying activities may be restricted for short periods due to thunderstorms with low clouds, heavy rainfall, and gusty winds.

3. RECONNAISSANCE WEATHER. Generally poor during the early morning hours and improves slightly during the afternoon hours. The percentage frequency that the cloud cover is 2/8 or less and the visibility is 3 miles or greater ranges from 5 to 15 percent.

4. TERMINAL WEATHER. Hanoi, Vietnam. Cloudy with numerous thunderstorms and heavy rainfall. Cloud ceilings are less than 5000 feet 10-15 percent of the time and less than 1000 feet approximately 5 percent. The visibility is 1 mile or less approximately 1 percent of the time. Rainfall is expected on 15-19 days per month primarily in the form of moderate to heavy rain showers and/or thunderstorms. Thunderstorms occur during 7-11 days per month.

5. EXPOSURE WEATHER. Hot, humid, and cloudy with heavy rain showers.

<u>HANOI, VIETNAM</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)				
Absolute Maximum	108	104	101	99
Mean Maximum	92	91	90	88
Mean Minimum	78	78	78	76
Absolute Minimum	64	64	63	63
MEAN PRECIPITATION (INCHES)	9.0	12.1	12.8	10.8
MEAN NUMBER OF DAYS				
Precipitation	16	18	19	15
Thunderstorms	8	11	11	7

6. PARADROP WEATHER. Favorable along the Vietnam-China border 65-85 percent of the time. The weather is unfavorable primarily due to low clouds and rain. Winds greater than 13 knots are rare. Generally, the most favorable time for paradrops is in the late afternoon or early evening hours.

7. ASTRONOMICAL DATA. Hanoi, Vietnam. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0550	0559	0612	0621
Last Light	2004	2006	1950	1922

(Prepared: 23 March 1979)

OCTOBER

1. GENERAL. October is a transitional month from the persistent and heavy rainfall associated with the southwest monsoon and the cooler and drier flow characteristic of the northeast monsoon. Daily temperatures range from the low 70's to mid 80's (F) and drop to the mid 60's during the night. Precipitation is expected on 6-12 days per month with mean monthly accumulations ranging from 4 to 10 inches. Thunderstorms occur during 2-3 days during October. Mean cloudiness ranges from 60 to 70 percent and can be expected to decrease towards the late afternoon. There is a 15 percent chance of a tropical storm and/or typhoon affecting the local weather.

2. FLYING WEATHER. Fair. The monthly percentage frequency of ceiling/visibility greater than or equal to 5000 feet/6 miles is 30-60 percent; greater than 1000/2.5, 80-90 percent of the time. Flying weather is best during the late afternoon.

3. RECONNAISSANCE WEATHER. Fair to good. Total sky cover less than or equal to 2/8 and visibility greater than or equal to 2.5 miles can be expected on 3-8 days per month during early morning hours; 10-20 days per month in late afternoon. Low clouds predominate.

4. TERMINAL WEATHER. Hanoi, Vietnam. Warm with moderate to heavy rainfall. Temperatures range from the low 70's in the morning to the high 70's by afternoon. Rain occurs on approximately 10 days per month with an average accumulation of 6 inches. Ceilings less than 5000 feet occur 30-35 percent of the time. Ceilings less than 1000 feet occur 5-10 percent of the time. The visibility rarely goes below 2.5 miles.

5. EXPOSURE WEATHER.

HANOI, VIETNAM

OCT

TEMPERATURE (F)

Absolute Maximum	96
Mean Maximum	78
Mean Minimum	71
Absolute Minimum	55

MEAN PRECIPITATION (INCHES)	6.3
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MEAN NUMBER OF DAYS

Precipitation	10
Thunderstorms	3

6. PARADROP WEATHER. Favorable 70-85 percent of the time. The main weather factor hindering such operations is the frequent rainfall.

7. ASTRONOMICAL DATA. Hanoi, North Vietnam. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

OCT

First Light	0629
Last Light	1855

(Prepared: 6 February 1980)

SITUATION CLIMATIC BRIEF

OMAN

NOVEMBER - APRIL

1. GENERAL. Winter is characterized by partly cloudy skies and mild to warm temperatures. Precipitation is at a maximum during winter, but monthly amounts are light, generally less than 1 inch. Mean cloudiness is usually less than 25 percent. Daily minimum temperatures during January, the coolest month, range from the mid 50's (F) at interior locations to the mid 60's near the coast. Maximum temperatures of 75-80F during January increase to the low to mid 90's by April. Surface winds are predominantly northeasterly or easterly except during the afternoon along the south coast when a southerly sea breeze prevails. A strong, dusty (or sandy) northwesterly wind locally called the belat is common on the south coast. Visibility may be somewhat restricted by dust on 2-10 days per month. Thunderstorms occur on 1-2 days per month along the coast of the Gulf of Oman, but are rare elsewhere.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 20 percent of the time during the early morning along the coasts, but is rare inland. Fog and low clouds occur along the coast near Salalah in April. In spring, as hot afternoons become more common, thermal turbulence as high as 15,000 feet becomes a hazard over the inland desert. High-level turbulence near the jet stream can be a hazard during the winter months.

3. RECONNAISSANCE WEATHER. Suitable 15-28 days per month. The least favorable conditions occur along the south coast.

4. TERMINAL WEATHER. Muscat, Oman. Good. Scattered clouds and easterly winds are the rule. Ceiling/visibility less than 300 feet/1 mile occurs less than 1 percent of the time. Thunderstorms occur on 1-2 days per month in December and January.

5. EXPOSURE WEATHER. Generally comfortable, but afternoons near the coasts during March and April can be uncomfortably hot and humid.

<u>MUSCAT, OMAN</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	96	92	87	96	107	110
Mean Maximum	84	78	75	76	81	89
Mean Minimum	74	69	66	67	72	79
Absolute Minimum	43	36	33	27	40	54
MEAN PRECIPITATION (INCHES)	0.4	0.7	1.0	0.7	0.4	0.3
MEAN NUMBER OF DAYS						
Precipitation	1	2	2	1	1	1
Thunderstorms	0	1	2	0	0	0

6. PARADROP WEATHER. Generally suitable; however, gusty winds during the afternoon make conditions unsuitable as much as 85 percent of the time.

7. ASTRONOMICAL DATA. Salalah, Oman. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0605	0621	0633	0628	0611	0546
Last Light	1811	1816	1833	1848	1855	1901

(Prepared: 6 March 1980)

MAY - OCTOBER

1. GENERAL. Summer weather in Oman is almost cloudless, dry, and extremely hot. The maximum cloudiness and precipitation occur along the southern coastal region in July and August. Precipitation during those months amounts to about 1 inch per month. Mean high temperatures range between 100 and 115 (F), except near the coast where they range between 80 and 100. Low temperatures range from the 60's to mid 80's. Visibility is generally good. Morning fog in coastal regions, blowing sand/dust, mirages, and afternoon shimmers restrict visibilities some. Surface winds are generally light northwesterlies; however, south to southwesterly winds with afternoon speeds of 15-20 knots prevail along the east and south coastal regions from June to August. Gale force winds occur on 4 days or less at southern locales and are rare elsewhere.

2. FLYING WEATHER. Generally good. However, poor conditions, low ceilings, and visibilities, frequently occur in July and August at east and south coast locations, particularly near Salalah. Blowing sand and/or dust can at times extend to 15,000 feet and affect flying operations. During June through September, the east and south coast regions have ceiling/visibility less than 5000 feet and/or 6 miles 25-95 percent of the time; 1500/3, 10-80 percent; 500/1, 5-30 percent. Otherwise, conditions of less than 5000/6 occur in Oman less than 10 percent of the time; 1500/3, less than 5 percent; and 500/1, rarely ever. Thunderstorms are rare. Convective, orographic, and jet stream turbulence, especially in clear air, are frequent hazards.

3. RECONNAISSANCE WEATHER. Generally good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur during 18-30 days per month. The exception is during June through September at east and south coast regions where conditions are favorable only 1-10 days per month.

4. TERMINAL WEATHER. Muscat, Oman. Generally good with clear to partly cloudy skies and hot temperatures. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time.

5. EXPOSURE WEATHER. Extremely hot, dry, and dusty conditions prevail in the interior. The coastal region has an uncomfortable hot and humid climate.

MUSCAT, OMAN	MAY	JUN	JUL	AUG	SEP	OCT
TEMPERATURE (F)						
Absolute Maximum	112	116	113	109	109	105
Mean Maximum	96	98	95	91	91	91
Mean Minimum	85	88	87	84	83	80
Absolute Minimum	75	78	77	75	72	63
MEAN PRECIPITATION (INCHES)	*	*	*	*	0.0	0.1
MEAN NUMBER OF DAYS						
Precipitation	*	*	*	*	0	*
Thunderstorms	0	0	0	0	0	0

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Favorable during late night and morning 65-95 percent of the time. During the afternoon and early evening hours, gusty winds in excess of 13 knots make conditions unfavorable as much as 85 percent of the time. Unfavorable conditions also occur in June-September during the morning along the southern coast due to low ceilings and visibilities.

7. ASTRONOMICAL DATA. Salalah, Oman. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0529	0526	0534	0544	0550	0554
Last Light	1911	1922	1925	1912	1848	1824

(Prepared: 18 March 1980)

SITUATION CLIMATIC BRIEF

PAKISTAN*

JULY - SEPTEMBER

1. GENERAL. The southwest monsoon season is cloudy, hot, and wet except in the Himalayas. Mean cloudiness is variable. In the Himalayas it ranges from 25 to 60 percent; at coastal locations it is 50-80 percent in the morning and 20-70 percent during the afternoon. In the rest of the country it is 15-50 percent. Mean daily maximum temperatures are in the 90's (F) and 100's. Minimums are in the 70's and 80's. Higher locations in the Himalayas are cooler. Numerous locations experience their maximum precipitation during July. The foothills of the Himalayas can have 15 or more inches of rainfall per month occurring on 8-15 days. The remainder of the country experiences 0-5 days of rainfall per month. Thunderstorm frequency is quite variable, and depends upon terrain. Exposed mountain slopes have as many as 15 thunderstorm days per month. In general, thunderstorms are infrequent on the plains and coastal locations, but some plains' locations experience fairly high thunderstorm frequencies, especially in July and August. Surface winds greater than 17 knots are infrequent except during the afternoon at coastal locations.

2. FLYING WEATHER. Generally good. Windward mountain slopes may experience rather frequent thunderstorm activity. Restrictions to visibility, mostly morning fog and afternoon haze and dust, are frequent and widespread. Several locations report visibilities less than 6 miles nearly 100 percent of the time. Visibilities less than 3 miles occur 25-55 percent of the time at a few coastal and mountain stations, and less than 1 mile up to 20 percent of the time. Ceilings less than 5000 feet occur up to 70 percent of the time along the coast and in the Himalayan foothills, but are infrequent elsewhere.

3. RECONNAISSANCE WEATHER. Fair to good. Poor along the coast due to cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or more occur less than 10 days per month along the coast and 10-25 days per month elsewhere.

4. TERMINAL WEATHER. Rawalpindi, Pakistan. Generally good. Conditions may briefly deteriorate in heavy rain showers. Thunderstorms occur 7-14 days per month. Ceiling/visibility less than 300/1 is infrequent. Runway crosswinds greater than 15 knots (Runway 120-300) occur 2-4 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Temperatures are uniformly very hot except for higher locations in the Himalayas. In addition, relative humidities along the coast and in the Indus River Valley are uncomfortably high. Southward-facing slopes of the Himalayas can receive rather heavy rainfall amounts.

<u>RAWALPINDI, PAKISTAN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)			
Absolute Maximum	117	111	107
Mean Maximum	98	94	93
Mean Minimum	77	76	69
Absolute Minimum	64	63	53
MEAN PRECIPITATION (INCHES)	8.1	9.2	3.9
MEAN NUMBER OF DAYS			
Precipitation	9	8	4
Thunderstorms	14	13	7

* Only season available.

6. PARADROP WEATHER. Generally good, however, coastal locations may experience afternoon gusty surface winds. Conditions at Karachi are favorable for paradrops 50-90 percent of the time, and at Rawalpindi 80-95 percent of the time.

7. ASTRONOMICAL DATA. Rawalpindi, Pakistan. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0440	0501	0522
Last Light	1936	1912	1834

(Prepared: 20 November 1979)

SITUATION CLIMATIC BRIEF

SAUDI ARABIA

NOVEMBER - MARCH

1. GENERAL. Saudi Arabia has a hot desert-type climate with sparse rainfall. Temperatures are mild in the coastal regions, but are relatively warm to hot in the south. Inland locations, especially on high ground, have cool to cold nights with frost a fairly common occurrence. Cloudiness is heaviest during this season with the principal annual rainfall occurring during this time, but mean rainfall is less than 1 inch per month. Mirages and shimmer during the heat of the day may severely limit horizontal visibility. Dust storms/sandstorms produced by strong surface winds and squalls are a common occurrence. Winds greater than 16 knots occur 5-20 percent of the time, gale force winds less than 5 percent. Squalls may be severe. Thunderstorms are rare.

2. FLYING WEATHER. Generally good. The ceiling/visibility is less than 5000 feet and/or 6 miles 5-10 percent of the time inland, and 10-25 percent along coastal areas. Conditions less than 1500/3 occur 1-4 percent of the time; less than 500/1, less than 2 percent. Thunderstorms are rare. Convective and orographic turbulence up to 10,000 feet or higher are frequent hazards. Clear-air turbulence is a hazard near the jet stream.

3. RECONNAISSANCE WEATHER. Good. Conditions are usually suitable on at least 20 days per month. Afternoon is the least favorable time of day due to blowing dust.

4. TERMINAL WEATHER. Riyadh, Saudi Arabia. Generally good. Visibility is frequently restricted by dust, but visibility less than 1 mile is rare. Occasional light rain showers occur during the winter months. Runway crosswinds greater than 15 knots occur 1-8 percent of the time.

5. EXPOSURE WEATHER. Precipitation, although normally light, is quite heavy in winter squall conditions. These squalls occasionally cause temporary flooding.

<u>DHAHRAN, SAUDI ARABIA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>					
Absolute Maximum	99	87	96	92	100
Mean Maximum	84	73	70	72	79
Mean Minimum	65	56	53	54	60
Absolute Minimum	48	40	36	34	43
<u>MEAN PRECIPITATION (INCHES)</u>	0.18	0.82	0.85	0.48	0.46
<u>MEAN NUMBER OF DAYS</u>					
Precipitation	1	3	3	2	4
Dust Storms	3	3	5	6	8

6. PARADROP WEATHER. Generally good except during the afternoon hours when gusty surface winds make conditions unfavorable as often as 60 percent of the time, especially along coastal areas.

7. ASTRONOMICAL DATA. Riyadh, Saudi Arabia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0545	0605	0615	0604	0540
Last Light	1730	1732	1750	1811	1825

(Prepared: 7 February 1980)

APRIL - OCTOBER

1. GENERAL. The summer season is frequently cloudless, hot, and dry. Mean cloudiness ranges from about 3 percent in the desert interior to approximately 10 percent along the Red Sea and Arabian Gulf coast. Daily minimum temperatures are in the 60's to 80's (F). Daily maximum temperatures are in the 90's to 110's. Rainfall is rare. Mornings are characterized by calm winds while afternoons are characterized by desert winds which usually reach 17 knots or greater. Gale force winds may occur in the desert interior. The strong afternoon winds cause frequent sandstorms/dust storms. Heat shimmer during the day may severely limit horizontal visibility.

2. FLYING WEATHER. Generally good. Visibility is frequently reduced due to dust storms/sandstorms, mirages, haze, and heat shimmer. The ceiling/visibility is less than 5000 feet and/or 6 miles less than 5 percent of the time. The most significant hazard to flying operations is thermal turbulence during the afternoon. This can be moderate to severe in the lower levels and extend to as high as 15,000 feet. Thunderstorms are rare.

3. RECONNAISSANCE WEATHER. Very good. Conditions are favorable except for afternoon dust storms and sandstorms. These occur on about 10 days per month.

4. TERMINAL WEATHER. Riyadh, Saudi Arabia. Generally good. Visibility is frequently restricted by dust in the afternoon, but visibility of less than 1 mile is rare. For July, runway crosswinds greater than 15 knots occur as often as 19 percent of the time during the afternoon.

5. EXPOSURE WEATHER. It is very hot, windy, and dry during the day. Nighttime conditions are relatively warm.

<u>DHAHRAN, SAUDI ARABIA</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)							
Absolute Maximum	100	116	119	119	120	116	112
Mean Maximum	79	99	106	108	108	103	95
Mean Minimum	60	77	82	85	84	79	70
Absolute Minimum	43	63	67	70	72	70	54
MEAN PRECIPITATION (INCHES)	0.1	0.2	*	*	*	*	*
MEAN NUMBER OF DAYS							
Precipitation	2	1	*	*	*	*	*
Thunderstorms	*	*	0	*	0	0	0

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Fair to good except on afternoons when the surface wind exceeds 13 knots. Some locations have favorable weather only 15-30 percent of the time during the middle of the afternoon.

7. ASTRONOMICAL DATA. Dhahran, Saudi Arabia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0509	0445	0438	0448	0503	0516	0528
Last Light	1838	1854	1909	1910	1852	1821	1752

(Prepared: 7 February 1980)

SITUATION CLIMATIC BRIEF

SYRIA

NOVEMBER - APRIL

1. GENERAL. The winter climate of Syria is partly cloudy with occasional rainfall. Temperatures are cool to mild. Syria is frequently affected at this time of year by migratory lows moving off the Mediterranean Sea bringing cloudiness, rainfall, and gusty winds. Surface winds of 17 knots or greater occur on 5-8 days per month along the coast and on 2-4 days inland. Mean cloudiness ranges from 20 to 55 percent. Rain falls on 3-6 days per month in the eastern desert, and on 7-16 days per month in the wetter northwestern parts of the country. The northwestern parts of the country can also expect 1-2 days with snowfall during January and February. Daily minimum temperatures are in the 30's and 40's (F) increasing to the 50's and 60's by afternoon. By April temperatures reach the mid 70's or low 80's. Sandstorms may occur over the interior desert on hot afternoons in March and April.

2. FLYING WEATHER. Generally good. Ceilings less than 5000 feet occur as often as 40 percent, and less than 1500 feet as often as 15 percent of the time over northwestern Syria. Ceilings less than 500 feet and significant visibility restrictions are infrequent except around Aleppo and Hamah where morning fog and low clouds are fairly common from December through February. Thunderstorms are infrequent except along the Mediterranean coast, but show a slight increase in frequency during April. The migratory lows which affect Syria at this time of year cause aircraft icing and turbulence.

3. RECONNAISSANCE WEATHER. Fair to good. The poorest conditions are encountered along the Mediterranean coast and northwestern Syria, the best in the eastern desert. The sky cover is 2/8 or less and the visibility is 3 miles or greater on 3-10 days in northwestern Syria and 20 days in eastern Syria.

4. TERMINAL WEATHER. Damascus, Syria. Generally good. Conditions are partly cloudy. Ceiling/visibility less than 300 feet/1 mile occurs about 1 percent of the time. Rain falls on 5-7 days per month through February, but shows a sharp decrease in frequency during March and April. Thunderstorms can be expected on about 1 day per month. Runway crosswinds greater than 15 knots occur as often as 10 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Partly cloudy and cool with occasional rainfall. Rainfall and cloudiness decrease and temperatures become warm or occasionally hot by April.

<u>DAMASCUS, SYRIA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	90	70	72	86	88	95
Mean Maximum	68	59	54	58	64	75
Mean Minimum	47	41	37	38	42	48
Absolute Minimum	27	23	21	23	27	33
MEAN PRECIPITATION (INCHES)	0.9	2.0	2.3	1.3	0.7	0.3
MEAN NUMBER OF DAYS						
Precipitation	5	6	7	7	2	2
Thunderstorms	1	1	1	1	0	1

6. PARADROP WEATHER. Usually favorable 70-90 percent of the time. However, this percentage can decrease to 50 percent during the afternoon due to gusty winds, especially during April.

7. ASTRONOMICAL DATA. Damascus/Mezze, Syria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0540	0604	0612	0554	0522	0440
Last Light	1659	1656	1717	1745	1807	1831

(Prepared: 7 February 1980)

MAY - OCTOBER

1. GENERAL. The summer season in Syria is relatively cloudless, hot, and dry. Mean cloudiness ranges from near 0 percent in the desert interior to around 35 percent along the Mediterranean coast. Daily minimum temperatures are in the 60's and 70's (F); daily maximums are in the 90's and 100's. Precipitation is scanty. Afternoons are windy in the interior desert with winds of 17 knots or greater occurring almost every day. This causes frequent localized sandstorms. Thunderstorms are rare except along the Mediterranean coast where they are expected on 1-3 days per month.

2. FLYING WEATHER. Very good. Ceilings less than 5000 feet occur 5-20 percent of the time along the Mediterranean coast, but are rare elsewhere. The only significant visibility restriction occurs locally during the afternoon with blowing sand or dust. The most significant hazard to flying operations is thermal turbulence during the afternoon. This can be moderate to severe in the lower levels and extend to as high as 15,000 feet.

3. RECONNAISSANCE WEATHER. Very good. Conditions are suitable almost every day.

4. TERMINAL WEATHER. Damascus, Syria. Good. Skies are mostly clear. The only significant problem is runway crosswinds greater than 15 knots, which can occur over 15 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Very hot, windy, and dry during the afternoon. Nighttime temperatures are cool.

<u>DAMASCUS, SYRIA</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	101	102	109	113	102	99
Mean Maximum	84	91	96	99	91	81
Mean Minimum	55	61	64	64	60	54
Absolute Minimum	43	48	52	54	48	41
MEAN PRECIPITATION (INCHES)	0.1	*	0.0	0.0	0.1	0.4
MEAN NUMBER OF DAYS						
Precipitation	1	*	0	0	*	2
Thunderstorms	2	0	0	0	*	1

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Fair to good. Poor during the afternoon due to surface winds in excess of 13 knots. Some locations have favorable weather 15-20 percent of the time during the middle of the afternoon.

7. ASTRONOMICAL DATA. Damascus (Mezze), Syria. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0408	0356	0407	0430	0453	0514
Last Light	1855	1915	1914	1848	1807	1727

(Prepared: 9 November 1979)

SITUATION CLIMATIC BRIEF

THAILAND

NOVEMBER - APRIL

1. GENERAL. This is the season of the northeast monsoons or dry season characterized by reduced cloudiness, precipitation, and restricted visibility over most of Thailand. The exception is that the eastern mountain slopes of peninsular Thailand receive their maximum cloudiness and rainfall at this time of year. Both the coolest and warmest temperatures of the year occur during the dry season: December and January are the coolest months while March and April are the warmest months. Mean cloudiness varies from 30-60 percent in northern and central Thailand to 50-80 percent in southern and peninsular Thailand. Diurnal minimum temperatures are in the 60's (F) during the cooler months, and 70's during the warmer months. The northern mountains have temperatures in the 50's. Daily maximum temperatures are in the high 80's and low 90's in the cool months and mid to upper 90's in the warm months. Many locations on the central plains and the Khorat Plateau are very hot during March and April with mean daily maximums of 100F or higher. Rain falls on about 1-10 days per month on the average with November and April having the highest frequencies. Peninsular Thailand has as many as 24 days per month with rainfall. Thunderstorms follow a similar pattern. Surface winds are northeasterly at 10-15 knots during the afternoon and calm 25-55 percent of the time at night.

2. FLYING WEATHER. Fair to good, except fair to poor in peninsular Thailand due to cloudiness and rainfall. Ceiling/visibility less than 5000 feet and/or 6 miles occurs as often as 95 percent of the time, primarily because of restricted visibility due to smoke from burning rice fields. Conditions less than 1500/3 occur 1-30 percent of the time, again due primarily to smoke. Conditions less than 500/1 are infrequent. Thunderstorms are most frequent (5-20 days per month) during November and April.

3. RECONNAISSANCE WEATHER. Fair to good except in peninsular Thailand where it is usually poor. Visibility is frequently restricted by smoke. Sky cover less than or equal to 2/8 and visibility greater than 3 miles occur on an average of 2-20 days per month depending on location. Late afternoon is the most favorable time of day. The northern mountains have the most favorable reconnaissance weather and peninsular Thailand the least favorable.

4. TERMINAL WEATHER. Bangkok/Don Muang, Thailand. Generally good. Ceiling/visibility less than 300/1 is rare. Visibility less than 3 miles occurs 30-40 percent of the time around sunrise from January through March. Conditions begin to deteriorate during April due to the onset of the southwest monsoon or wet season.

5. EXPOSURE WEATHER. Usually partly cloudy, hot, and smokey. Morning temperatures in the northern mountains are cool. Afternoon temperatures are hot, very hot on the central plains and Khorat Plateau. This combined with high humidity, makes conditions uncomfortable. Peninsular Thailand is cloudy with frequent rainfall.

<u>BANGKOK/DON MUANG, THAILAND</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	96	98	98	100	103	105
Mean Maximum	88	87	91	93	95	96
Mean Minimum	75	69	67	71	74	76
Absolute Minimum	57	55	52	54	62	65
MEAN PRECIPITATION (INCHES)	1.9	0.3	0.2	1.1	1.7	4.3
MEAN NUMBER OF DAYS						
Precipitation	6	2	1	3	5	11
Thunderstorms	4	*	*	2	5	11

* = less than 0.5 day

6. PARADROP WEATHER. Usually good. When conditions are unfavorable it is normally due to surface winds in excess of 13 knots during the afternoon. Frequent rainfall may interfere with paradrops in peninsular Thailand.

7. ASTRONOMICAL DATA. Bangkok/Don Muang, Thailand. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0555	0610	0622	0620	0604	0543
Last Light	1809	1815	1831	1844	1849	1853

(Prepared: 21 December 1979)

MAY - OCTOBER

1. GENERAL. The weather during the rainy season or southwest monsoon is partly cloudy to cloudy and hot, with frequent heavy rainfall and thunderstorms. Mean cloudiness averages 70-90 percent. Mean daily minimum temperatures are in the 70's (F), while maximums are in the upper 80's and lower 90's. Rain falls on an average of 7-25 days per month. Many locations receive rainfall on more than 15 days per month during all months of the rainy season. Rainfall on southwest-facing mountain slopes is particularly frequent and heavy. Much of this rainfall occurs during thunderstorms. September and October are the rainiest months. Surface winds are southerly to southwesterly at 6-10 knots. Winds are calm at night 20-50 percent of the time.

2. FLYING WEATHER. Generally good in spite of the high frequency of rainfall and thunderstorms, because most of the rainfall is due to afternoon convective activity. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-50 percent of the time. Ceiling/visibility less than 1500/3 occurs as often as 45 percent of the time on exposed mountain slopes, but generally less than 15 percent elsewhere. Ceiling/visibility less than 500/1 is rare.

3. RECONNAISSANCE WEATHER. Very poor due to persistent heavy cloud cover; however, some improvement occurs during October in the northern part of Thailand. Cloud cover 2/8 or less and visibility 3 miles or greater generally occur on less than 3 days per month.

4. TERMINAL WEATHER. Bangkok/Don Muang, Thailand. Generally good. Conditions are usually partly cloudy to cloudy with afternoon thunderstorms. Fog occurs on more than half of the mornings each month, but seldom restricts the visibility significantly. Ceiling/visibility less than 300/1 is rare.

5. EXPOSURE WEATHER. Hot and humid. Rain showers and thunderstorms are frequently heavy.

BANGKOK/DON MUANG, THAILAND

	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	103	100	100	97	96	97
Mean Maximum	94	92	91	91	89	89
Mean Minimum	77	77	77	77	77	77
Absolute Minimum	69	70	69	67	69	61
MEAN PRECIPITATION (INCHES)	6.8	6.8	7.1	8.5	11.9	10.5
MEAN NUMBER OF DAYS						
Precipitation	16	17	19	20	22	17
Thunderstorms	17	11	11	11	13	11

6. PARADROP WEATHER. Fair to good. The chief restriction is afternoon precipitation, but ceilings less than 1500 feet can hamper paratroops at some locations.

7. PORT/BEACH CONDITIONS. Gusty winds in excess of 16 knots are expected 10-20 percent of the time on the open sea. Gale force winds are expected less than 1 percent of the time. Amphibious landing craft or small boats could encounter rough seas 2-5 percent of the time during May-July and 2 percent in August-October.

8. ASTRONOMICAL DATA. Bangkok/Don Muang, Thailand. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0528	0526	0534	0542	0545	0547
Last Light	1900	1910	1913	1902	1841	1820

(Prepared: 20 April 1979)

SITUATION CLIMATE BRIEF

TURKEY

OCTOBER - MARCH

1. GENERAL. Winter weather in Turkey is cloudy with frequent precipitation. Temperatures vary from mild along parts of the Mediterranean and Aegean Sea coasts to bitterly cold in the mountainous eastern portions of the interior. Morning minimum temperatures during January range from near zero degrees in the northeastern mountains to the mid 40's (F) along the Mediterranean coast. Afternoon maximum temperatures in the same areas range from the lower 20's to the lower 60's. Precipitation usually occurs as rain along the Mediterranean and Aegean Sea coasts, rain or snow on the Black Sea coast, and as snow in the interior. Precipitation occurs on about 10-15 days per month over most of the country; less on the central plateau, and more along the Black Sea coast. Thunderstorms occur on 1-3 days per month along the Mediterranean and Aegean Sea coasts in winter, but are rare over the remainder of Turkey.

2. FLYING WEATHER. Fair to poor over sections of central Turkey to generally good along the coasts. Ceiling/visibility is less than 5000 feet and/or 6 miles about 15-20 percent of the time along the Mediterranean coast, and as often as 60 percent in the interior. Ceiling/visibility less than 1500/3 occurs 1-5 percent of the time along the Mediterranean and Aegean Sea coasts and 30-40 percent of the time in the interior. Conditions less than 500/1 are rare along the coasts, but occur up to 25 percent of the time on the central plateau. These low ceilings and visibilities usually occur during the early morning hours as a result of fog. Aircraft icing occurs above the freezing level in the clouds that accompany migratory low pressure systems. Mountain-wave turbulence can be expected occasionally, but data on its frequency are not available.

3. RECONNAISSANCE WEATHER. Generally poor. The mean number of days per month with cloud cover 2/8 or less and visibility 3 miles or greater ranges from 2-10 days during the early morning hours to 5-15 days during the evening. The best conditions for reconnaissance usually occur along the Mediterranean coast.

4. TERMINAL WEATHER. Good conditions along the coasts to poor at interior locations. Ceiling/visibility less than 300/1 occurs as often as 25 percent of the time during the morning hours around Ankara, but almost never along the coasts. Thunderstorms occur on about 2 days per month at Adana and 2-3 days per month at Izmir. Crosswinds may exceed 15 knots 10-15 percent of the time at Samsun and Izmir, but are generally not a problem at the other terminals.

5. EXPOSURE WEATHER. Cloudy with frequent precipitation at most locations. Temperatures are mild on the Mediterranean and Aegean Sea coasts, chilly on the Black Sea coast, and quite cold on the interior plateau around Ankara. The eastern portions of the interior are normally extremely cold.

<u>ANKARA</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)						
Absolute Maximum	92	78	69	62	69	83
Mean Maximum	68	56	44	39	42	51
Mean Minimum	44	37	30	25	26	31
Absolute Minimum	22	1	-12	-13	-12	3
MEAN PRECIPITATION (INCHES)	0.9	1.1	1.8	1.4	1.5	1.4
MEAN NUMBER OF DAYS						
Precipitation	6	8	13	13	12	10
Snowfall	0	1	2	5	6	2
Thunderstorms	1	*	*	*	*	1

<u>INCIRLIK (ADANA)</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)						
Absolute Maximum	107	94	80	72	79	87
Mean Maximum	84	73	62	58	60	66
Mean Minimum	59	52	45	42	42	46
Absolute Minimum	38	24	24	19	20	23
MEAN PRECIPITATION (INCHES)	1.5	2.3	4.5	4.0	4.1	2.6
MEAN NUMBER OF DAYS						
Precipitation	5	6	10	11	11	9
Snowfall	0	0	0	*	0	0
Thunderstorms	3	2	2	2	2	2

* = less than 0.5 day

6. PARADROP WEATHER. Generally poor due to frequent precipitation, low morning visibility in central Turkey, and wind in excess of 13 knots in those parts of Turkey along the Aegean and Black Sea coasts. Conditions at Ankara are unfavorable 25-45 percent during the morning hours; Izmir is unfavorable 30-55 percent of the time. Locations along the Mediterranean Sea coast are generally more favorable than other locations in Turkey. Adana is unfavorable 10-35 percent of the time.

7. PORT/BEACH CONDITIONS. Winds exceeding 16 knots occur on the Mediterranean and Aegean Seas 15-40 percent of the time; gale force winds, 5-10 percent. Amphibious craft or small boats would encounter rough seas 5-15 percent of the time on the Mediterranean and Aegean Seas, and 15-35 percent on the Black Sea. Wind speed data are not available for the Black Sea, but the high incidence of rough seas indicates that gale force winds may be the rule there.

8. ASTRONOMICAL DATA. Incirlik (Adana), Turkey. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0519	0549	0615	0623	0601	0524
Last Light	1729	1657	1652	1713	1744	1811

(Prepared: 5 April 1979)

APRIL - MAY

1. GENERAL. This season is generally characterized by decreasing cloudiness and precipitation, and mild temperatures. Locations in central Turkey normally have the greatest precipitation amounts and highest thunderstorm frequencies during these months. Morning minimum temperatures range from the mid 40's (F) in the interior to 50-60F on the Mediterranean Sea Coast. Afternoon maximum temperatures range from 60-65F on the Black Sea Coast to 75-80F on the Mediterranean. The mean number of days with rainfall ranges from 4-10 days on the Mediterranean and Aegean Sea coasts to 10-14 days on the Black Sea coast. Thunderstorms occur on 2-5 days per month along the coasts and 5-8 days per month in the interior. The sirocco, a hot, dry, dust-laden wind originating in North Africa, occurs most frequently during these months.

2. FLYING WEATHER. Generally good. Ceiling/visibility is less than 5000 feet and/or 6 miles 15-25 percent of the time; less than 1500/3, 1-2 percent of the time. Ceiling/visibility less than 500/1 is rare in Turkey during these months. Aircraft icing can be expected above the freezing level in the clouds and thunderstorms that accompany migratory low pressure systems. Mountain-wave turbulence can be expected occasionally, but data on its frequency are not available.

3. RECONNAISSANCE WEATHER. Generally fair to poor. The mean number of days with cloud cover 2/8 or less ranges from 5-15 days along the Mediterranean and Aegean Sea coasts to 0-8 days over the interior of Turkey. Maximum cloudiness tends to occur during the early afternoon. Visibility is usually good except along portions of the Black Sea coast where fog can be a problem.

4. TERMINAL WEATHER. Generally good. Samsun on the Black Sea coast has more cloudiness than the other terminals. Ceiling/visibility less than 300/1 is rare at any location. Crosswinds are greater than 15 knots 5-10 percent of the time except at Izmir where they are greater than 15 percent of the time. Crosswinds are generally strongest in the mid and late afternoon. Ankara and Izmir usually have the highest thunderstorm frequency of the year in May.

5. EXPOSURE WEATHER. Partly cloudy to cloudy with mild temperatures and moderate amounts of precipitation at most locations.

	<u>SAMSUN</u>		<u>ANKARA</u>		<u>ADANA</u>	
	<u>APR</u>	<u>MAY</u>	<u>APR</u>	<u>MAY</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)						
Absolute Maximum	99	99	89	94	98	106
Mean Maximum	59	66	63	72	74	83
Mean Minimum	46	53	40	49	52	59
Absolute Minimum	28	37	19	32	32	45
MEAN PRECIPITATION (INCHES)	2.1	1.7	1.3	2.0	1.8	2.0
MEAN NUMBER OF DAYS						
Precipitation	12	13	10	12	8	6
Snowfall	*	0	*	0	0	0
Thunderstorms	1	3	2	6	3	5

* = less than 0.5 day

6. PARADROP WEATHER. Generally poor during the mid and late afternoon due to winds in excess of 13 knots. The percentage frequency that winds exceed 13 knots during mid and late afternoon ranges from 30-50 percent except at Izmir where it ranges from 50-70 percent.

7. PORT/BEACH CONDITIONS. Winds exceeding 16 knots are experienced on the Mediterranean and Aegean Seas 10-20 percent of the time. Gale force winds occur about 5 percent of the time in April, but decrease to 1 percent in May. Amphibious craft or small boats would encounter rough seas 1-5 percent of the time on the Mediterranean and Aegean Seas, and 5-10 percent on the Black Sea. Wind speed data are not available for the Black Sea, but the incidence of rough seas indicates that gale force winds may be common there.

8. ASTRONOMICAL DATA. Incirlik (Adana), Turkey. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0438	0502
Last Light	1839	1908

(Prepared: 15 April 1979)

JUNE - SEPTEMBER

1. GENERAL. Summer in Turkey is generally clear to partly cloudy with infrequent rainfall and warm to hot temperatures. The Black Sea coast, especially the eastern portion, has more cloudiness and precipitation than the remainder of

Turkey. Morning minimum temperatures range from 60-65F in the interior and along the Black Sea coast to 65-70F on the Mediterranean and Aegean Sea coasts. Afternoon maximum temperatures range from 75-80 on the Black Sea coast to 90-95F on the Mediterranean and Aegean Sea coasts. The mean number of days with rainfall ranges from 1-3 days along the coastal areas of the Mediterranean and Aegean Seas to 5-10 days along the Black Sea coast. Thunderstorms occur over the interior plateau during 5 days of the month in June and 1-2 days a month for the remainder of the summer. The Black Sea coast has its highest thunderstorm frequency during the summer with 1-3 occurrences per month. Thunderstorms are rare in summer along the Mediterranean and Aegean Sea coasts. Waterspouts are occasionally seen along the Black Sea coast during the summer.

2. FLYING WEATHER. Generally good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-30 percent of the time along the Black Sea coast, 10-20 percent around the Gulf of Iskenderun, and 5-10 percent over the remainder of Turkey. Ceiling/visibility less than 1500/3 occurs 1-2 percent of the time. Ceiling/visibility less than 500/1 rarely occurs anywhere in Turkey during the summer. Aircraft icing is infrequent except in the clouds that occur along the eastern portion of the Black Sea coast. Midafternoon turbulence below 10,000 feet is common due to strong surface heating. It can become moderate to severe at times.

3. RECONNAISSANCE WEATHER. Fair to poor over the interior plateau during June improving to good later in the summer. It is generally fair to poor all summer along the eastern reaches of the Black Sea coast, and generally good along the Mediterranean and Aegean Sea coasts. The mean number of days with cloud cover 2/8 or less ranges from 5-10 days along the eastern Black Sea coast to 15-30 days over the remainder of the country. Visibility less than 3 miles is rare.

4. TERMINAL WEATHER. Generally good. Samsun has considerably more cloudiness and precipitation than the other terminals. Cloud cover at Samsun is 6/8 or greater on 8-10 days per month. Ceiling/visibility less than 300/1 is rare at any terminal. Mid and late afternoon crosswinds greater than 15 knots can be a problem at Izmir, occurring 15-30 percent of the time. Thunderstorm activity is infrequent, generally occurring on 2 days or less per month.

5. EXPOSURE WEATHER. Clear to partly cloudy with warm to hot temperatures and infrequent rainfall at most locations. Afternoon relative humidity can be low in the interior. Locations along the Black Sea coast have more cloudiness, more rainfall, and lower temperatures than the remainder of Turkey.

<u>SAMSUN, TURKEY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)				
Absolute Maximum	97	97	102	100
Mean Maximum	74	79	80	75
Mean Minimum	60	66	67	61
Absolute Minimum	46	52	54	44
MEAN PRECIPITATION (INCHES)	1.6	1.4	1.2	2.2
MEAN NUMBER OF DAYS				
Precipitation	8	6	6	9
Thunderstorms	3	2	1	2

<u>ANKARA, TURKEY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)				
Absolute Maximum	98	102	104	96
Mean Maximum	80	86	87	78
Mean Minimum	55	59	60	52
Absolute Minimum	39	40	42	29

MEAN PRECIPITATION (INCHES)	1.2	0.5	0.3	0.7
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MEAN NUMBER OF DAYS				
Precipitation	8	3	2	4
Thunderstorms	5	2	1	1

<u>INCIRLIK (ADANA), TURKEY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)				
Absolute Maximum	109	107	114	109
Mean Maximum	89	93	95	91
Mean Minimum	66	71	72	67
Absolute Minimum	49	53	59	49

MEAN PRECIPITATION (INCHES)	0.8	0.2	0.2	0.6
-----------------------------	-----	-----	-----	-----

MEAN NUMBER OF DAYS				
Precipitation	3	1	1	2
Thunderstorms	3	1	1	2

6. PARADROP WEATHER. Generally poor during the mid and late afternoon due to winds in excess of 13 knots. Along the Mediterranean and Aegean Sea coasts the afternoon wind exceeds 13 knots 40-90 percent of the time; in the interior of the country, 30-80 percent.

7. PORT/BEACH CONDITIONS. Winds exceeding 16 knots occur on the Mediterranean and Aegean Seas 15-30 percent of the time. Gale force winds 2-4 percent. Amphibious craft or small boats would encounter rough seas 1-5 percent of the time on the Mediterranean and Aegean Seas, and 10-20 percent on the Black Sea. Wind speed data are not available for the Black Sea, but the incidence of rough seas indicates that gale force winds are common there.

8. ASTRONOMICAL DATA. Incirlik (Adana), Turkey. (Date as of the 15th/local standard time)

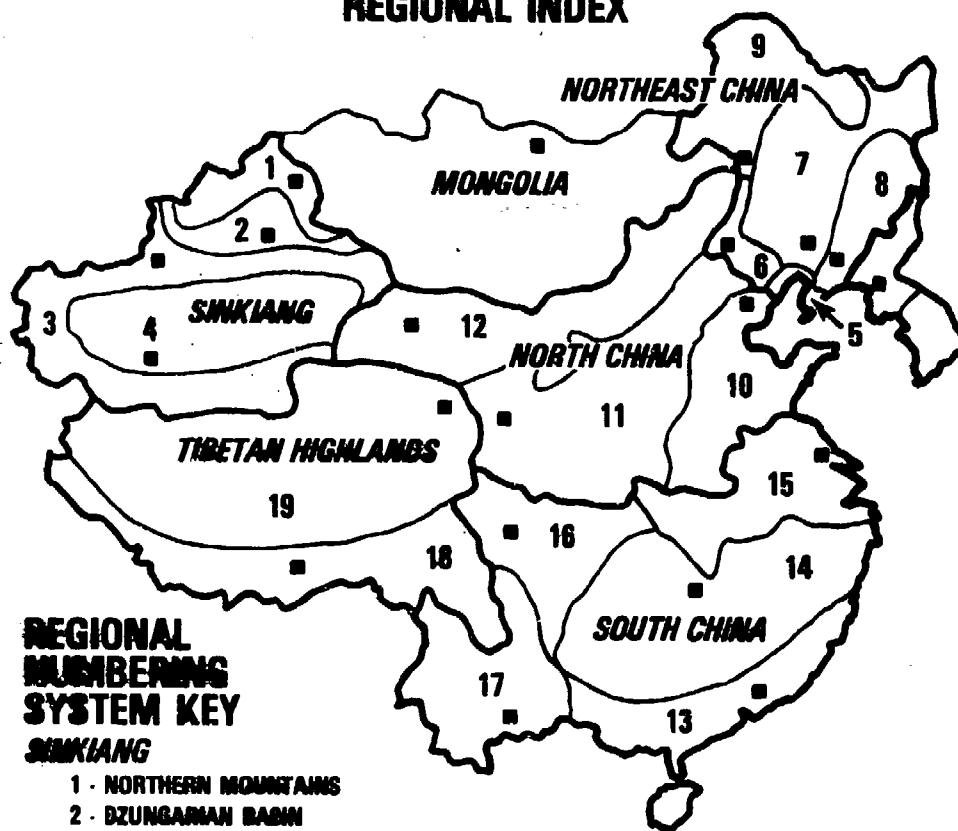
<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0347	0400	0427	0457
Last Light	1930	1928	1858	1813

SITUATION CLIMATIC BRIEFS

PART D

CHINA

CHINA REGIONAL INDEX



REGIONAL NUMBERING SYSTEM KEY

SINKIANG

- 1 - NORTHERN MOUNTAINS
- 2 - DZUNGARIAN BASIN
- 3 - CENTRAL & SOUTHERN MTNS.
- 4 - TARIM BASIN

NORTHEAST CHINA

- 5 - COAST
- 6 - SOUTHWESTERN HIGHLANDS
- 7 - LOWLANDS
- 8 - EASTERN HIGHLANDS
- 9 - NORTHERN HIGHLANDS

NORTH CHINA

- 10 - EASTERN PLAINS & HILLS
- 11 - CENTRAL HIGHLANDS
- 12 - NORTHERN PLATEAU

SOUTH CHINA, HAINAN, & HONG KONG

- 13 - SOUTHERN PLAINS, HILLS, & HAINAN
- 14 - CENTRAL UPLANDS
- 15 - NORTHEAST LOWLANDS
- 16 - NORTHWEST MTNS./SZECHWAN BASIN
- 17 - SOUTHWEST MTNS./YUNNAN PLATEAU

TIBETAN HIGHLANDS

- 18 - SOUTHERN MOUNTAINS
- 19 - NORTHERN HIGHLANDS & BASIN

■ REPRESENTATIVE
WEATHER SITES

Figure 2. China - Regional Index.

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(Prepared: 29 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA CENTRAL HIGHLANDS REGION OF NORTH CHINA*

NOVEMBER - MARCH

1. GENERAL. Winter in the Central Highlands Region of North China is partly cloudy, cold, and dry. Mean cloud cover varies from 25-75 percent and is affected by the topography; cloudiness is greatest along windward slopes. Mean daily minimum temperatures range from -13F in the north to 45F in the south. Maximums vary from 10F to 63F. Precipitation is rare except along the mountain slopes where it is frequent. Light snow predominates until March when some rain falls in the eastern portions of the region. Thunderstorms and gale force winds (28 knots or greater) are rare and usually occur only at mountain locations in association with storm passages. Dust/sandstorms are infrequent, but can reduce visibilities significantly for several hours.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, 1-6 percent. These frequencies are higher in the Yellow River Valley where visibility is less than 6 miles due to dust, haze, and fog 50-75 percent of the time. Sian, an industrial center, has ceiling/visibility less than 500/1 up to 25 percent of the time in the morning.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-25 days per month. Poorest conditions occur in the valleys during the afternoon due to increased clouds.

4. TERMINAL WEATHER. Lanzhou, China. Fair to poor. Haze and fog reduce visibility to less than 2.5 miles up to 40 percent of the time in the morning during December and January. Ceiling/visibility less than 300/1 occurs 2-10 percent of the time.

5. EXPOSURE WEATHER. Low temperatures throughout the season, especially extremely cold temperatures during December and January, make conditions uncomfortable. Dust/sandstorms also make conditions unfavorable on 2-5 days a month between January and March.

LANZHOU, CHINA	NOV	DEC	JAN	FEB	MAR
TEMPERATURE (F)					
Absolute Maximum	71	68	59	64	81
Mean Maximum	48	37	36	43	54
Mean Minimum	24	11	8	16	29
Absolute Minimum	4	-7	-10	-8	3
MEAN PRECIPITATION (INCHES)	0.2	0.1	*	0.1	0.3
MEAN NUMBER OF DAYS					
Precipitation	2	1	1	2	4
Snowfall	2	1	1	2	2
Thunderstorms	0	0	0	*	*
Dust Storms	1	1	1	1	4

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 65-90 percent of the time. Haze and smoke can restrict visibility in the morning along the Yellow River Valley.

* North China lies between 32-47°N and 94-123°E.

7. ASTRONOMICAL DATA. Lanzhou, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0713	0739	0747	0726	0651
Last Light	1824	1820	1841	1911	1937

(Prepared: 29 December 1981)

APRIL - MAY

1. GENERAL. Spring in the Central Highlands Region of North China is a transition period from cool, dry weather to mild, cloudy weather with frequent, light precipitation. Mean cloud cover varies from 30-85 percent with maximum amounts during the afternoon. Mean daily minimum temperatures range from near 20F in the north during April to 60F in the south during May. Maximums from vary from 43F (April) to 82F (May). Rain or rain showers occur on 5-10 days a month. Thunderstorms are rare in April, but occur on 5 days in May. Gale force winds (28 knots or greater) are rare. Dust/sandstorms occur on 1-6 days per month and are more common during the spring than during any other season.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 3-10 percent; and less than 500/1, less than 3 percent. However, at some places in the east, such as Dolon Nor, ceilings less than 5000 feet occur almost 50 percent of the time. At others such as Fu-Shih and Sian, visibility less than 6 miles occurs up to 60 percent of the time due, in part, to haze and fog. Low clouds and rain showers restrict VFR flying at times, especially over the southwest in the afternoon. Turbulence primarily occurs in the vicinity of fronts and storm systems.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-18 days per month. Cloud cover usually makes the reconnaissance weather poor in the afternoon.

4. TERMINAL WEATHER. Lanzhou, China. Good. However, rain showers occasionally cause brief periods of lower ceilings/visibilities during the afternoon. Ceiling/visibility less than 300/1 occurs 1-3 percent of the time.

5. EXPOSURE WEATHER. Frequent rain showers and occasional dust/sandstorms make conditions less than ideal.

<u>LANZHOU, CHINA</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	92	96
Mean Maximum	67	77
Mean Minimum	41	49
Absolute Minimum	17	33
<u>MEAN PRECIPITATION (INCHES)</u>	0.6	1.3
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	5	7
Snowfall	1	*
Thunderstorms	1	2
Dust Storms	3	3

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable 55-90 percent of the time. Morning fog/haze and afternoon rain showers affect operations. The least favorable conditions occur in the southwestern mountainous section.

7. ASTRONOMICAL DATA. Lanzhou, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

APR

MAY

First Light

0606

0530

Last Light

2004

2031

(Prepared: 29 December 1981)

JUNE - AUGUST

1. GENERAL. Summer in the Central Highlands Region of North China is cloudy with frequent rain showers, hot days, and mild nights. Mean cloudiness varies from 55-75 percent. Mean daily minimum temperatures range from 40-75F. Maximums range from 60F to 95F. Rain showers occur on up to 15 days a month and can produce accumulations of up to 7 inches per month, although 3 inches is about average. Thunderstorms occur up to 16 days per month in the east and southeast, but infrequently in the western mountains. Gale force winds (28 knots or greater) are rare. Dust/sandstorms are also rare.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet occur 20-50 percent of the time during the afternoon and visibilities less than 6 miles occur up to 60 percent of the time during the morning at a few central interior locations; less than 1500/3, 2-15 percent; and less than 500/1, less than 2 percent. Low-level turbulence occurs over much of the region during the afternoon. Rain showers and/or thunderstorms frequently obscure the mountains in the southwest, making flight conditions potentially hazardous.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-18 days a month. Rain showers make conditions poor in the afternoon.

4. TERMINAL WEATHER. Lanzhou, China. Fair. Haze and fog often reduce visibility in the morning and rain showers usually affect conditions during the afternoon. However, ceiling/visibility less than 300/1 occurs less than 1 percent of the time.

5. EXPOSURE WEATHER. Hot and humid days with frequent rain showers make the summer uncomfortable.

<u>LANZHOU, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	99	100	100
Mean Maximum	82	85	82
Mean Minimum	57	62	60
Absolute Minimum	37	47	42
MEAN PRECIPITATION (INCHES)	1.6	2.6	3.6
MEAN NUMBER OF DAYS			
Precipitation	9	10	11
Thunderstorms	4	4	4
Dust Storms	2	1	1

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrop operations 75-95 percent of the time in the morning, but only 50-80 percent during the afternoon due to rain showers.

7. ASTRONOMICAL DATA. Lanzhou, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0516	0529	0554
Last Light	2053	2051	2022

(Prepared: 29 December 1981)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn in the Central Highlands Region of North China is partly cloudy with warm to mild daytime temperatures and is drier than in summer. Cloud cover averages 40-70 percent. Mean daily minimum temperatures range from 25F to 65F. Maximums range from 44F to 82F. Temperatures are lower at higher elevations. Rain or rain showers occur on 5-15 days a month with a few days of snow by late October. Thunderstorms are mainly confined to September. Gale force winds (28 knots or greater) and sand/dust storms are rare phenomena, but occasionally accompany the passage of strong fronts and migratory storms.

2. FLYING WEATHER. Fair to poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, less than 2 percent. These frequencies are significantly greater at Fu-shih, Sian, and T'ai-yuan where ceiling/visibility less than 5000/6, for instance, can occur over 50 percent of the time during the early morning. The worst conditions occur in the mountains where rain showers and thunderstorms obscure peaks and ridges, especially during the afternoon.

3. RECONNAISSANCE WEATHER. Poor to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 8-24 days a month. Because of the decreased shower activity and cloudiness in October, reconnaissance weather tends to improve through the season.

4. TERMINAL WEATHER. Lanzhou, China. Good. Ceiling/visibility less than 300/1 usually occurs less than 1 percent of the time, but is most frequent during very early morning hours. Rain showers briefly reduce ceiling/visibility during September, but the weather is good by late October.

5. EXPOSURE WEATHER. Autumn is the most comfortable season of the year with warm to mild days and diminishing precipitation.

<u>LANZHOU, CHINA</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	90	82
Mean Maximum	72	62
Mean Minimum	52	40
Absolute Minimum	33	19
<u>MEAN PRECIPITATION (INCHES)</u>	2.2	0.7
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	12	6
Snowfall	0	1
Thunderstorms	3	*
Dust Storms	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Favorable paradrop conditions occur 60-90 percent of the time. Rain affects most operations that are conducted during September. However, by October, most locations have good paradrop weather.

7. ASTRONOMICAL DATA. Lanzhou, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

	<u>SEP</u>	<u>OCT</u>
First Light	0620	0644
Last Light	1938	1855

(Prepared: 30 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA EASTERN PLAIN AND HILLS REGION OF NORTH CHINA*

NOVEMBER - MARCH

1. GENERAL. Winter in the Eastern Plain and Hills Region of North China, the longest season of the year, is partly cloudy with cool days, cold nights, and an average of 2-5 days of precipitation per month. Mean cloud cover varies from 30 to 50 percent during the morning, but increases to 40-70 percent during the afternoon. Mean daily minimum temperatures range from 12F in January to 42F in March. Maximums temperatures range from 31 to 62F. Precipitation normally falls as snow flurries except in November when it is usually rain. Thunderstorms are extremely rare. Gale force winds (28 knots or greater) are infrequent, but can occur in association with cold fronts and produce severe dust/sandstorms.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500 feet/3 miles, 5-15 percent; and less than 500/1, 2-6 percent. Slightly higher frequencies occur at a few coastal and southern locations.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-22 days per month; the best conditions occur between late evening and early morning.

4. TERMINAL WEATHER. Peiping, China. Good. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time with greatest likelihood during midmorning. Fog can reduce visibility to less than 5/8 mile an average of 2 days per month throughout the season.

5. EXPOSURE WEATHER. Cool to cold temperatures and occasionally gusty winds make conditions uncomfortable.

<u>PEIPING, CHINA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)					
Absolute Maximum	75	56	58	65	85
Mean Maximum	50	38	35	40	53
Mean Minimum	30	18	14	19	30
Absolute Minimum	8	-3	-9	-4	7
MEAN PRECIPITATION (INCHES)	0.4	0.1	0.2	0.2	0.3
MEAN NUMBER OF DAYS					
Precipitation	3	2	3	3	3
Snowfall	1	2	2	3	2
Dust/sandstorms	*	*	1	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 45-80 percent of the time. Precipitation and gusty surface winds frequently affect afternoon operations.

7. ASTRONOMICAL DATA. Peiping, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0630	0658	0705	0641	0601
Last Light	1728	1721	1743	1817	1848

* North China lies between 32-47°N and 94-123°E.

(Prepared: 30 December 1981)

APRIL - MAY

1. GENERAL. Spring in the Eastern Plain and Hills Region of North China is partly cloudy with mild to warm days and cool nights. Precipitation increases in frequency and amount. Mean cloudiness varies from 40 to 75 percent. Mean daily minimum temperatures range from near 40F to 60F. Maximums vary from 57F to 87F. Rain or rain showers occur on 2-8 days per month; thunderstorms are less frequent, occurring 1-3 days a month. Gale force winds (28 knots or greater) infrequently occur with fast-moving cold fronts. Dust/sandstorms affect the region on 1-4 days per month and can significantly reduce visibility.

2. FLYING WEATHER. Good to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500 feet/3 miles, 5-15 percent; and less than 500/1, less than 5 percent. These frequencies are higher at a few coastal locations due to low clouds and fog. Turbulence and icing can occur with strong frontal systems and make flying conditions unfavorable.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 6-18 days a month. Generally, poorest conditions occur along the coast.

4. TERMINAL WEATHER. Peiping, China. Good. Ceiling/visibility less than 300/1 seldom occurs more than 1 percent of the time. Rain or rain showers occasionally restrict conditions for very brief periods.

5. EXPOSURE WEATHER. Spring is a short but comfortable season with warm days and generally cool nights. Although infrequent, dust storms can adversely affect most outdoor activity.

<u>PEIPING, CHINA</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	96	101
Mean Maximum	69	80
Mean Minimum	43	56
Absolute Minimum	26	38
<u>MEAN PRECIPITATION (INCHES)</u>	0.7	1.4
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	4	6
Thunderstorms	1	3
Dust Storms	2	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-80 percent of the time with optimal weather between late evening and early morning.

7. ASTRONOMICAL DATA. Peiping, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0510	0430
Last Light	1920	1953

(Prepared: 30 December 1981)

JUNE - AUGUST

1. GENERAL. Summer in the Eastern Plain and Hills Region of North China is cloudy, hot, and humid with abundant rain. Mean cloud cover ranges from an average of 55 percent in the morning to about 70 percent during the afternoon. Mean daily minimum temperatures vary from 62F to 77F. Maximums vary from 73F to 96F. Precipitation, usually rain showers, occurs on 5-13 days a month with thunderstorms only slightly less frequent. Gale force winds (28 knots or greater), although infrequent, usually accompany intense thunderstorms. Dust/sandstorm frequency decreases during the summer, averaging 1-2 days in June. The Shantung Peninsula is normally affected by 1-2 typhoons per season. These cause prolonged periods of low ceilings, thundershowers, strong winds, and heavy rain. Flooding is common in the plains.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-40 percent of the time; less than 1500 feet/3 miles, 2-10 percent; and less than 500/1, 1-3 percent. These percentage frequencies can be considerably greater along the coastline of the Shantung Peninsula; Tsingtao, for instance, is less than 500/1 up to 50 percent of the time during early morning hours.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days per month. Mornings are mostly fair, but afternoons are poor due to increased cloud cover.

4. TERMINAL WEATHER. Peiping, China. Good. Briefly fair to poor in the afternoons due to frequent rain showers and thunderstorms. Ceiling/visibility less than 300/1 occurs up to 3 percent of the time.

5. EXPOSURE WEATHER. Hot and humid with frequent afternoon rain showers or thunderstorms, making conditions oppressive. The summer monsoon sometimes causes widespread flooding, particularly in the extreme eastern sections of this region.

<u>PEIPING, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	109	105	101
Mean Maximum	89	89	87
Mean Minimum	65	71	69
Absolute Minimum	47	59	52
<u>MEAN PRECIPITATION (INCHES)</u>	3.1	9.6	5.8
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	8	13	11
Thunderstorms	6	8	5
Dust Storms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrops 70-90 percent of the time. Morning is the best time for paradrops except along the west coast where low cloud ceilings could affect operations.

7. ASTRONOMICAL DATA. Peiping, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0413	0426	0456
Last Light	2017	2015	1941

(Prepared: 30 December 1981)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn is partly cloudy and mild with decreasing precipitation. Mean cloud cover varies from 35 to 60 percent. Mean daily minimum temperatures range from 45F to 65F. Maximum temperatures range from 65F to 85F. Rain showers and thunderstorms are infrequent. Gale force winds (28 knots or greater) are rare, but can occur in association with the one or two typhoons that pass near the Shantung Peninsula each season. Dust/sandstorms are rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 1-3 percent. By October, migratory storms and fronts begin to penetrate the region and cause brief periods of low clouds, rain or rain showers, turbulence, and aircraft icing.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days per month. Cloud cover, especially in the eastern and southern portions of the region, limits reconnaissance.

4. TERMINAL WEATHER. Peiping, China. Good. Ceiling/visibility less than 300/1 occurs 1-5 percent of the time, usually during the early morning.

5. EXPOSURE WEATHER. Autumn is relatively comfortable with warm days and, mild evenings, and low humidity.

<u>PEIPING, CHINA</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	91	88
Mean Maximum	80	69
Mean Minimum	58	44
Absolute Minimum	35	23
<u>MEAN PRECIPITATION (INCHES)</u>	2.3	0.6
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	7	3
Thunderstorms	3	0
Dust Storms	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paratroops 65-90 percent of the time. Morning and late evening are the best times for paratroops.

7. ASTRONOMICAL DATA. Peiping, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>
First Light	0527	0557
Last Light	1852	1804

(Prepared: 24 November 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA NORTHERN PLATEAU REGION OF NORTH CHINA*

NOVEMBER - MARCH

1. GENERAL. Winter in the Northern Plateau Region is partly cloudy, cold, and dry. Mean cloud cover varies from 30 to 60 percent with the greatest amounts in the afternoon. Mean daily minimum temperatures range from near -25F (at higher elevations) to 30F. Maximums range from -2F to 57F. Precipitation, usually light snow, occurs on about 1-7 days a month most frequently at the higher elevations. Gale force winds (28 knots or greater) are infrequent, but are most likely to occur in the northeast in association with cold fronts and intense low pressure systems. Dust storms and/or sandstorms usually occur after frontal passages on 1-5 days a month and reduce visibility for several hours.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 3-10 percent of the time (at extreme northeastern locations, up to 20 percent of the time); less than 1500 feet/3 miles, 2-5 percent; and less than 500/1, less than 3 percent. Occasionally, good flying weather is restricted by cold fronts which can cause periods of low ceilings and turbulence.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-25 days a month.

4. TERMINAL WEATHER. Yu-men, China. Good. Ceiling/visibility less than 300/1 occurs 1-5 percent of the time. Sand/dust storms can cause ceiling/visibility less than 1000/3 on 2-4 days per month.

5. EXPOSURE WEATHER. Precipitation is usually light and infrequent. The cold temperatures and occasional sand/dust storms of the region unfavorably affect both personnel and equipment.

<u>YU-MEN, CHINA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)					
Absolute Maximum	64	52	46	57	70
Mean Maximum	41	29	25	35	49
Mean Minimum	19	9	4	12	23
Absolute Minimum	-4	-18	-18	-13	-7
MEAN PRECIPITATION (INCHES)	0.2	*	*	0.4	0.1
MEAN NUMBER OF DAYS					
Precipitation	3	5	1	2	2
Snowfall	3	4	2	2	2
Duststorms	1	2	2	2	3

* = less than 0.05 inch

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 75-90 percent of the time with mornings slightly better than other times. However, in portions of the southwestern mountain region, winds are likely to exceed 13 knots during the afternoon and the probability of precipitation is slightly higher than in other sections.

* North China lies between 32-47°N and 94-123°E.

7. ASTRONOMICAL DATA. Yu-men, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0748	0816	0822	0757	0716
Last Light	1844	1837	1859	1934	2004

(Prepared: 24 November 1981)

APRIL - MAY

1. GENERAL. Spring in the Northern Plateau Region of North China is cloudy with low relative humidity, mild days, and cold nights. Mean cloudiness varies from 50 to 75 percent. Mean daily minimum temperatures range from 15F to 55F. Maximums range from 50F to 80F. Rain and rain showers occur on 7 days a month; light snow is infrequent. Thunderstorms are rare in April, but occur on up to 6 days during May. Gale force winds (28 knots or greater) are rare but sometimes accompany some of the strongest migratory storm systems as they move through the northeastern sections of the region. Dust storms and/or sandstorms occur on up to 8 days per month, more often than at any other time of the year.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 2-30 percent of the time; less than 1500/3, 1-15 percent; and less than 500/1, less than 5 percent. Visibility can be restricted by haze, fog, and blowing dust and/or sand. Turbulence is generally associated with storm systems and can be severe over the mountains of the southwest. Dust/sandstorms and showers briefly reduce ceilings and visibilities, especially during the afternoon.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 7-20 days a month. Extensive cloud cover and low visibilities result in fair mornings and, oftentimes, poor afternoons.

4. TERMINAL WEATHER. Yu-men, China. Good. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. However, visibility is significantly reduced (seldom less than 3 miles) during the afternoon by dust/sandstorms which occur up to 7 days a month.

5. EXPOSURE WEATHER. Days are normally mild, dry, and windy, while nights are cold. Dust/sandstorms occur on 5 days a month.

<u>YU-MEN, CHINA</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	82	90
Mean Maximum	62	70
Mean Minimum	35	44
Absolute Minimum	17	18
<u>MEAN PRECIPITATION (INCHES)</u>	0.2	0.3
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	3	2
Snowfall	1	0
Thunderstorms	*	*
Dust Storms	4	3

* = less than 0.5 day

6. PARADROP WEATHER. Good except over the southwestern mountains where low clouds and winds can affect paradrops during the afternoon. Conditions are favorable for paradrops 65-95 percent of the time.

7. ASTRONOMICAL DATA. Yu-men, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0625	0544
Last Light	2037	2110

(Prepared: 25 November 1981)

JUNE - AUGUST

1. GENERAL. Summer in the Northern Plateau Region of North China is cloudy and wet with hot days and mostly mild nights. Mean cloud amounts vary from about 40 percent in the evening and morning to 75 percent during most afternoons. Mean daily minimum temperatures range from 43F to 66F. Maximums range from 68F to 93F. Precipitation, usually rain showers, falls on 2-18 days per month and is most frequent in the northeast section of the region. Thunderstorms occur on about 5 days per month, usually during the afternoon. Sand/dust storms occur on 1-2 days per month. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-25 percent of the time (ceilings correspond to the highest percentages); less than 1500 feet/3 miles, 1-5 percent; and less than 500/1, less than 2 percent. Thunderstorms, low-level turbulence (especially over the mountains), and sand/dust storms occasionally make flying conditions unfavorable. Rain showers and low clouds frequently obscure the mountain ridges.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 8-15 days per month. Best conditions occur from late evening to midmorning.

4. TERMINAL WEATHER. Yu-men, China. Good. Ceiling/visibility less than 300/1 occurs about 1 percent of the time. Visibility is occasionally reduced to less than 6 miles by morning haze/fog or afternoon blowing dust or sand.

5. EXPOSURE WEATHER. Days are warm to hot with occasional afternoon rain showers.

<u>YU-MEN, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	98	96	96
Mean Maximum	80	83	81
Mean Minimum	55	59	56
Absolute Minimum	46	49	45
 <u>MEAN PRECIPITATION (INCHES)</u>	 0.2	 0.7	 0.3
 <u>MEAN NUMBER OF DAYS</u>			
Precipitation	2	5	6
Thunderstorms	0	3	4
Dust Storms	1	1	1

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 70-95 percent of the time. The northeast is often only fair during the afternoon due to frequent rain showers and thunderstorms.

7. ASTRONOMICAL DATA. Yu-men, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0528	0542	0613
Last Light	2135	2132	2059

(Prepared: 24 November 1981)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn in the Northern Plateau Region of North China is partly cloudy with mild days and cold nights. Precipitation decreases. Mean cloud cover is 40-50 percent. Mean minimum temperatures range from 25F to 50F. Maximums range from about 50F to 80F. Rain in September turns to light snow by October when it occurs up to 2 days during the month. Thunderstorms are rare; about one occurs during October. Gale force winds (28 knots or greater) are rare and are normally associated only with the strongest cold fronts traversing the area.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles usually occurs 1-10 percent of the time (but can occur 25 percent in the north-east); less than 1500 feet/3 miles, 1-5 percent; and less than 500/1, less than 2 percent. Increasingly frequent cold fronts cause turbulence and low clouds for brief periods. Sand/dust storms occur up to 2 days a month and can restrict visibility for several hours.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-25 days per month. The north central sections have the best weather.

4. TERMINAL WEATHER. Yu-men, China. Good. Ceiling/visibility less than 300/1 occurs 1 percent of the time, primarily due to occasional morning fog. Cold fronts traverse the area on occasion, but seldom cause extended poor weather.

5. EXPOSURE WEATHER. Mild days, cold nights, and several days with winds of 16 knots or greater create blustery conditions.

<u>YU-MEN, CHINA</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	86	77
Mean Maximum	73	59
Mean Minimum	46	32
Absolute Minimum	23	12
<u>MEAN PRECIPITATION (INCHES)</u>	*	0.1
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	1	2
Snowfall	0	2
Thunderstorms	*	0
Dust Storms	*	*

* = less than 0.05 inch or 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paratroops 70-90 percent of the time. Winds greater than 13 knots in the afternoon impact on paratroops.

7. ASTRONOMICAL DATA. Yu-men, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

First Light
Last Light

SEP

0645
2009

OCT

0715
1920

(Prepared: 29 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA THE COASTAL REGION OF NORTHEAST CHINA*

DECEMBER - FEBRUARY

1. GENERAL. Winter is fair to partly cloudy and cold with occasional, light precipitation. Mean cloudiness varies from 20 to 45 percent. Mean daily minimum temperatures range from about 5F to 20F. Mean maximums are mostly in the 20's and 30's. Snow is the usual form of precipitation and occurs on 2-9 days a month. January is the month of most frequent snow cover. Thunderstorms are extremely rare. Gale force winds (28 knots or greater) occur less than 5 percent of the time except along the Liaotung Peninsula where the frequency is between 5 and 10 percent. Many coastal locations experience persistent and gusty surface winds.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-25 percent of the time (although visibility less than 6 miles occurs up to 50 percent of the time at a few industrial areas during the early morning); less than 1500/3, 5-25 percent in the morning and 2-10 percent during the afternoon; and less than 500/1, 2-10 percent. Low clouds and fog/haze occasionally result in poor early morning flying weather at altitudes below 5000 feet, but these conditions seldom persist for more than a few hours.

3. RECONNAISSANCE WEATHER. Fair to good. Low clouds commonly obscure the ground during the first few daylight hours of the morning. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 13-24 days a month, however.

4. TERMINAL WEATHER. Luda, China. Good to fair. Ceiling/visibility less than 300/1 occurs 1-5 percent of the time. Surface winds are frequently strong and gusty; speeds of 17 knots or greater occur up to 25 percent of the time during the afternoon.

5. EXPOSURE WEATHER. An uncomfortable time of the year with cold, blustery conditions.

<u>LUDA, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	55	51	57
Mean Maximum	35	30	33
Mean Minimum	22	16	19
Absolute Minimum	-2	-4	-3
<u>MEAN PRECIPITATION (INCHES)</u>	0.5	0.4	0.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	5	4	3
Snowfall	4	5	5

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrops 50-85 percent of the time. Early morning low clouds and afternoon surface winds exceeding 13 knots are the primary restrictions.

7. ASTRONOMICAL DATA. Luda, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0635	0641	0617
Last Light	1702	1724	1757

* Northeast China lies between 39-54°N and 116-135°E

(Prepared: 29 December 1981)

MARCH - MAY

1. GENERAL. Mild days and cool nights under partly cloudy skies are typical of spring. Mean cloud cover is normally between 30 and 60 percent with slightly greater amounts observed during early morning hours. Mean daily minimum temperatures range from near 25F to 50F. Maximums range from the low 40's to 75F. Precipitation usually occurs as snow in March, but changes to rain by April. Light snow or rain falls on 2-9 days per month. Thunderstorms are rare with only 1-3 such days during May. Gale force winds (28 knots or greater) are not uncommon and probably occur 5-10 percent of the time; however, winds of 17 knots or greater occur up to 30 percent of the time.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time (although visibility less than 6 miles may occur 50 percent of the time at a few locations); less than 1500/3, 5-15 percent; and less than 500/1, 3-10 percent in the morning and 1-5 percent in the afternoon. Fog and low clouds can adversely affect flying below 5000 feet, but such phenomena rarely persists beyond midmorning.

3. RECONNAISSANCE WEATHER. Fair. Extensive cloudiness and sea fog, haze, and smoke are the prime restrictions. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days a month. Nighttime is the best time for reconnaissance.

4. TERMINAL WEATHER. Luda, China. Good. However, winds of 17 knots or greater occur about 25 percent of the time throughout the season. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time with most such occurrences during morning hours.

5. EXPOSURE WEATHER. Somewhat uncomfortable due to cool temperatures and gusty winds until May when conditions moderate.

<u>LUDA, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	66	83	90
Mean Maximum	43	58	69
Mean Minimum	29	42	52
Absolute Minimum	5	25	35
<u>MEAN PRECIPITATION (INCHES)</u>	0.6	1.0	1.8
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	4	5	6
Snowfall	4	3	*
Thunderstorms	*	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-85 percent of the time. Rain showers and winds greater than 13 knots are the most common limiting factors.

7. ASTRONOMICAL DATA. Luda, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0538	0449	0411
Last Light	1826	1857	1928

(Prepared: 29 December 1982)

JUNE - AUGUST

1. GENERAL. Summer is cloudy and rainy with warm days and mild nights. Average cloud cover varies little and is usually near 70 percent. Mean daily minimum temperatures are mostly in the 60's (F). Mean maximums range from 75F to 85F. Rain showers, the predominant form of precipitation, occur on 7-13 days per month and occasionally develop into thunderstorms. Gale force winds (28 knots or greater) occur about 3 percent of the time.

2. FLYING WEATHER. Fair. Low clouds and fog affect morning flying, primarily along the coast and peninsulas, while rain showers or thunderstorms affect afternoon operations. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-25 percent of the time except during July when these conditions occur 25-50 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, 5-15 percent.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 3-16 days a month. Extensive cloudiness during the afternoon affects operations.

4. TERMINAL WEATHER. Luda, China. Fair to poor due to early morning low clouds and fog and afternoon rain showers. Ceiling/visibility less than 300/1 occurs 5-20 percent of the time, usually during early morning.

5. EXPOSURE WEATHER. Comfortable during the evening and morning, but muggy during the afternoon.

<u>LUDA, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	95	99	96
Mean Maximum	77	81	83
Mean Minimum	62	69	71
Absolute Minimum	50	50	59
MEAN PRECIPITATION (INCHES)	1.7	6.1	5.2
MEAN NUMBER OF DAYS			
Precipitation	8	11	10
Thunderstorms	2	2	2

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paratroops 60-85 percent of the time. Afternoon rain showers restrict paratroops.

7. ASTRONOMICAL DATA. Luda, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0355	0409	0438
Last Light	1952	1950	1918

(Prepared: 29 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in the Coastal Region of Northeast China is a period of partly cloudy skies, decreasing precipitation, and mostly mild days and cool nights. Mean cloud cover varies between 30 and 55 percent. Mean daily minimum temperatures range from 50F to 60F early in the season and decrease rapidly by

November to the 20's. Maximums are in the mid 70's in September and fall to the mid 40's by November. Precipitation falls as rain in September and October, but changes to snow by November. Thunderstorms occur on 1-4 days a month. Gale force winds (28 knots or greater) occur 5-10 percent of the time. Winds 17 knots or greater occur up to 20 percent of the time at locations near the coast.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-25 percent in September improving to 5-15 percent of the time during October and November (highest frequencies occur during morning hours); less than 1500/3, 5-15 percent; and less than 500/1, 2-10 percent. Most locations experience the best flying weather during afternoon hours as a result of improved visibilities and ceilings. Low-level turbulence should be anticipated at coastal locations with peak intensity during afternoon hours.

3. RECONNAISSANCE WEATHER. Good to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-22 days a month. Haze or fog frequently restrict visibilities during the morning and clouds increase during the afternoon making conditions most favorable during the late afternoon hours.

4. TERMINAL WEATHER. Luda, China. Fair. Fog and haze reduce visibility in the morning. Gusty winds affect takeoff/landing conditions during many afternoons. Ceiling/visibility less than 300/1 occurs up to 2 percent of the time; visibility less than 6 miles occurs 20 percent of the time in the morning, however.

5. EXPOSURE WEATHER. A rather comfortable time of the year although September is rainy and November quite windy and cool.

<u>LUDA, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	89	82	73
Mean Maximum	75	65	49
Mean Minimum	61	50	34
Absolute Minimum	42	27	11
MEAN PRECIPITATION (INCHES)	3.2	1.3	1.0
MEAN NUMBER OF DAYS			
Precipitation	7	6	6
Snowfall	0	*	*
Thunderstorms	2	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Winds of 13 knots or greater are most likely to impact paradrops operations. Additionally, low clouds occasionally restrict operations during early morning hours. Conditions are favorable for paradrops 60-90 percent of the time.

7. ASTRONOMICAL DATA. Luda, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0508	0536	0608
Last Light	1830	1743	1709

(Prepared: 31 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA
THE EASTERN HIGHLANDS REGION OF NORTHEAST CHINA*

DECEMBER - FEBRUARY

1. GENERAL. Partly cloudy skies, subfreezing temperatures, and frequent snowfall typify the weather pattern during the winter. Mean cloud cover varies from 30 to 45 percent. Average minimum temperatures range from -20F to +5F. Maximums range from 7F to 30F. Lowest temperatures occur at high elevations. Snow occurs on 5-15 days a month, but amounts seldom exceed 1 inch. Thunderstorms are rare. Locations bordering the USSR (in the southeast) and the Sea of Japan experience gale force winds (28 knots or greater) 5-10 percent of the time.

2. FLYING WEATHER. Good to fair. Smoke and haze restrict visibility to less than 6 miles from 20-60 percent of the time chiefly in the industrialized areas. Ceilings less than 5000 feet occur 5-20 percent of the time while visibilities less than 6 miles occur 20-60 percent (primarily morning hours); less than 1500 feet and/or 3 miles, 5-15 percent; and less than 500/1, 5-10 percent.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 12-25 days each month. A midday increase in cloud cover reduces the likelihood of having favorable weather during these hours.

4. TERMINAL WEATHER. Kuandian, China. Fair. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. Afternoon weather is generally the best weather after morning smoke and haze are dispersed by the winds.

5. EXPOSURE WEATHER. The extreme cold and frequent snowfall at most locations result in highly uncomfortable conditions. Equivalent chill temperatures are commonly below zero, imposing severe restrictions on outdoor activities.

<u>KUANDIAN, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	48	37	46
Mean Maximum	28	21	30
Mean Minimum	6	-6	6
Absolute Minimum	-35	-38	-18
MEAN PRECIPITATION (INCHES)	1.1	0.6	0.4
MEAN NUMBER OF DAYS			
Precipitation	6	4	4
Snowfall*	6	4	4

* = data derived from a nearby station

6. PARADROP WEATHER. Good. Favorable paradrop weather occurs between 70 and 95 percent of the time.

7. ASTRONOMICAL DATA. Kuandian, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0627	0633	0607
Last Light	1645	1707	1743

* Northeast China lies between 39-54°N and 117-135°E.

(Prepared: 31 December 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy with cool to mild temperatures and increasingly frequent precipitation. Mean cloudiness varies from 40-70 percent, reaching peak coverage during May. Those stations farthest inland from the coast have mean daily minimum temperatures of 8-42F and most others vary between 15F and 45F. Mean daily maximum temperatures range from 27F to 74F with most temperatures in the 60's and 70's by May. Precipitation, snow in March and rain showers by May, occurs on 5-15 days per month. Both thunderstorms and gale force winds (28 knots or greater) are rare. However, winds of 17 knots or greater occur about 5 percent of the time.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, 1-5 percent. Visibilities during the morning tend to be restricted by haze and smoke, but only rarely to less than 3 miles, while afternoons become increasingly affected by rain showers and occasionally strong surface winds. Aircraft icing and turbulence are more likely during the spring than at any other time of the year.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater can be expected on 5-18 days per month. March is the best month for reconnaissance operations. By May, increased cloudiness during most afternoons makes weather for operations mostly unfavorable.

4. TERMINAL WEATHER. Kuandian, China. Fair. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. Frequent afternoon rain showers can briefly lower ceiling/visibility to minimum operational conditions, especially during May.

5. EXPOSURE WEATHER. Generally uncomfortable because of the cold temperatures during March and the cold, wet conditions during May.

<u>KUANDIAN, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	61	79	90
Mean Maximum	41	58	71
Mean Minimum	23	34	46
Absolute Minimum	-20	18	32
MEAN PRECIPITATION (INCHES)	1.4	1.9	4.7
MEAN NUMBER OF DAYS			
Precipitation	6	7	13
Snowfall*	4	1	0
Thunderstorms	0	1	3

* = data derived from a nearby station

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrop operations 65-95 percent of the time. Late in the season, especially during May, frequent rain showers and gusty winds restrict operations.

7. ASTRONOMICAL DATA. Kuandian, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0525	0434	0353
Last Light	1814	1848	1921

(Prepared: 31 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy and humid with warm days and mild nights. Mean cloud cover varies from 50 to 75 percent. Temperatures vary little from month to month with average minimums normally in the 50's and 60's (F) and maximums in the 70's and 80's. Even though precipitation can vary significantly from one year to the next, rain/rain showers normally occur on 15 days per month with average accumulations between 3 and 10 inches each month. Locations along the Yalu River Basin are especially prone to flooding. Thunderstorms occur an average of 5 days each month. Gale force winds (28 knots or greater) are rare and normally occur only in association with thunderstorms or the typhoons that move along the coast about once every 3 years.

2. FLYING WEATHER. Fair to poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-55 percent of the time; less than 1500/3, 10-25 percent; and less than 500/1, 5-15 percent (less than 5 percent in the afternoons). The hilly terrain of the region is commonly obscured by clouds and rain showers during the afternoon. Additionally, turbulence and icing may be encountered in convective clouds that develop over the mountains. The best flying weather usually occurs from midmorning to early afternoon.

3. RECONNAISSANCE WEATHER. Fair to poor. Conditions of 2/8 sky cover or less and visibility of 3 miles or greater occur on 8-15 days per month during early morning, but deteriorate to 3-10 such days for all other hours.

4. TERMINAL WEATHER. Kuandian, China. Fair to poor. Ceiling/visibility less than 300/1 occurs 3 percent of the time. Takeoff and landing conditions are adversely affected by the high frequency of rain showers and thunderstorms which briefly lower ceilings and visibilities.

5. EXPOSURE WEATHER. Fairly comfortable in the evenings but can be oppressive during afternoons with high humidity and frequent showers.

<u>KUANDIAN, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	95	93	91
Mean Maximum	77	81	80
Mean Minimum	56	66	64
Absolute Minimum	37	55	43
<u>MEAN PRECIPITATION (INCHES)</u>	3.2	15.3	11.7
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	9	12	15
Thunderstorms	9	8	9

6. PARADROP WEATHER. Fair due to the high frequency of rain/rain showers. Favorable paradrop conditions exist from 60 to 90 percent of the time with the most favorable weather occurring between late evening and midmorning.

7. ASTRONOMICAL DATA. Kuandian, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0336	0350	0422
Last Light	1947	1944	1910

(Prepared: 30 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a period of transition characterized by decreasing cloudiness and falling temperatures. Average cloud cover decreases from 50-70 percent in September to 30-50 percent by November. Mean daily minimum temperatures vary from 44-53F in September to 10-20F in November. Mean maximums range from 70F to 90F. Precipitation, while frequent, decreases from a monthly average of 3 inches in September to less than 1 inch in November. By November, precipitation changes from rain to snow with the heaviest accumulations occurring in the southern section of the region. Although infrequent, thunderstorms and gale force winds (28 knots or greater) are usually associated with the low-pressure systems that migrate through the region. These systems cause periods of poor weather.

2. FLYING WEATHER. Fair. September is a month of frequent and heavy rain shower and occasional thunderstorm activity accompanied by low ceilings/visibilities. Aircraft icing occurs within the heaviest cloud masses and turbulence is common over much of the area's hilly terrain. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-40 percent of the time in September, but 10-20 percent by November; less than 1500/3, 5-15 percent; and less than 500/1, 5-15 percent in the morning, but less than 5 percent at other times. November has the best flying conditions of the season even though haze and smoke often reduce visibility near industrial centers.

3. RECONNAISSANCE WEATHER. Fair to poor. Cloud cover of 2/8 or less and visibility of 3 miles or greater occur on 8-15 days in September, but 15-22 days in November as the atmosphere becomes cold and dry.

4. TERMINAL WEATHER. Kuandian, China. Fair to good. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. The frequent rain showers of September reduce the ceiling and visibility for brief periods, particularly during the afternoon.

5. EXPOSURE WEATHER. Conditions can be uncomfortable due to the high humidity and rain showers in September while cold temperatures and snow become dominant in November.

<u>KUANDIAN, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	90	75	63
Mean Maximum	73	60	42
Mean Minimum	52	38	23
Absolute Minimum	30	18	-20
MEAN PRECIPITATION (INCHES)	3.5	2.4	1.7
MEAN NUMBER OF DAYS			
Precipitation	11	8	6
Snowfall*	0	1	3
Thunderstorms	7	3	1

* = data derived from a nearby station

6. PARADROP WEATHER. Good. Conditions are favorable for paradrop operations 70-90 percent of the time.

7. ASTRONOMICAL DATA. Kuandian, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0454	0525	0559
Last Light	1819	1730	1653

(Prepared: 30 November 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA
THE LOWLANDS OF NORTHEAST CHINA*

DECEMBER - FEBRUARY

1. GENERAL. Winters are very cold throughout the Lowlands of Northeast China with partly cloudy skies and occasional light snow. Mean cloud cover averages between 20 and 50 percent. Mean daily minimum temperatures range from near -30F at northern locations to +8F in the south. Maximums are between -1F and +30F. Precipitation nearly always falls as light snow, occurring on 5 days per month. Thunderstorms have never been reported. Gale force winds (28 knots or greater) occur less than 5 percent of the time; winds of 17 knots or greater, however, are reported with a frequency of 5-10 percent at some sites. Dust and sandstorms can last for several hours on 1-3 days per month.

2. FLYING WEATHER. Fair. Although low cloud ceilings are generally not a problem, visibility is often restricted to less than 6 miles during morning hours by haze, smoke, fog, or dust. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time (visibility less than 6 miles occurs up to 60-80 percent of the time at a few sites during the morning); less than 1500 feet/3 miles, 5-15 percent; and less than 500/1, less than 3 percent. Mukden generally has higher frequencies of low ceiling/visibility than the above. The region's weather is occasionally affected by migratory lows which cause turbulence, low clouds, snow, and aircraft icing. Generally, these phenomena do not persist for more than 1 or 2 days.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-25 days a month. Late evening hours tend to be best for reconnaissance operations.

4. TERMINAL WEATHER. Mukden, China. Poor. Haze, smoke, fog, and dust significantly reduce visibility especially during morning. Ceiling/visibility less than 300/1 occurs up to 60 percent of the time in the morning but 5-20 percent during the afternoon.

5. EXPOSURE WEATHER. The bitter cold coupled with strong winds result in extreme equivalent chill temperatures requiring protective measures.

MUKDEN, CHINA	DEC	JAN	FEB
TEMPERATURE (F)			
Absolute Maximum	52	48	58
Mean Maximum	25	20	27
Mean Minimum	8	-2	5
Absolute Minimum	-26	-28	-27
MEAN PRECIPITATION (INCHES)	0.4	0.2	0.2
MEAN NUMBER OF DAYS			
Precipitation	5	5	5
Snowfall	5	5	5

6. PARADROP WEATHER. Good in the morning. Fair in the afternoon due to winds in excess of 13 knots. Favorable paradrop conditions can be expected 60-80 percent of the time.

* Northeast China lies between 39-54°N and 116-135°E.

7. ASTRONOMICAL DATA. Mukden, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0635	0641	0613
Last Light	1648	1711	1747

(Prepared: 30 November 1981)

MARCH - MAY

1. GENERAL. Spring in the Lowlands of Northeast China is cloudy with increasingly frequent precipitation. Days are cool and the nights cold. The mean cloud cover varies from 30 to 75 percent and peaks during the afternoon. Mean daily minimum temperatures range from -1F to +21F in March and 30F to 45F in April and May. Maximums range from 26F to 73F. Precipitation normally occurs as snow in March, but is more likely to be rain by mid-April. Thunderstorms increase as the season progresses. Gale force winds (29 knots or greater) occur 5-10 percent of the time in the south central hills and can cause blowing dust primarily during the afternoon. Elsewhere, gale force winds occur less than 3 percent of the time.

2. FLYING WEATHER. Fair. Visibility is frequently restricted by haze or smoke in the morning. Rain showers affect flying conditions during the afternoon. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500 feet/3 miles, 2-8 percent; and less than 500/1, less than 3 percent. For all of these conditions, the frequencies are higher at Mukden where visibility is restricted to less than 3 miles about 50 percent of the time in the morning by fog and pollution. Intense low-pressure systems are common in the spring and cause periods of low clouds, rain showers, and turbulence.

3. RECONNAISSANCE WEATHER. Fair. Cloud cover, haze, and smoke limit reconnaissance. Sky cover of 2/8 or less and visibility of 3 miles or greater occur from 5-20 days per month. May is the least favorable month because of increased cloudiness.

4. TERMINAL WEATHER. Mukden, China. Fair to poor due to frequent haze and smoke in the morning and strong winds with occasional blowing dust in the afternoons. Ceiling/visibility conditions of less than 300/1 occur 5-20 percent of the time.

5. EXPOSURE WEATHER. Cold days and nights make conditions uncomfortable in March and April. Days become increasingly mild by May. Although infrequent, dust/sandstorms may be damaging to outdoor equipment.

<u>MUKDEN, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	68	87	93
Mean Maximum	41	60	73
Mean Minimum	21	36	50
Absolute Minimum	-13	9	28
<u>MEAN PRECIPITATION (INCHES)</u>	0.7	1.2	2.6
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	6	6	10
Snowfall	5	2	0
Thunderstorms	*	*	2
Dust Storms	1	4	4

* = less than 0.5 day

6. PARADROP WEATHER. Winds greater than 13 knots occur as much as 30 percent of the time at some locations, resulting in only fair to poor paratroop weather. Conditions are favorable for paratroops 55-75 percent of the time and the period from early evening to early morning is normally best.

7. ASTRONOMICAL DATA. Mukden, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0530	0437	0355
Last Light	1820	1855	1930

(Prepared: 30 November 1981)

JUNE - AUGUST

1. GENERAL. Summers in the Lowlands of Northeast China are cloudy, warm to hot during the day, and wet due to frequent afternoon rain showers. Cloud cover, averaging 50 to 80 percent, is most extensive during the afternoon. Temperatures vary little throughout the season with mean daily minimums ranging between 50F and 65F and maximums between 75F and 90F. Rain showers occur on half the days of each month. Thunderstorms occur on 5-10 days each month. The rain showers and thunderstorms cause widespread flooding over parts of the region. Gale force winds (28 knots or greater) are rare. Winds of 17 knots or greater occur about 6 percent of the time in June.

2. FLYING WEATHER. Fair. Frequent low clouds and afternoon rain showers or thunderstorms degrade flying weather nearly half the time. Ceiling/visibility less than 5000 feet and/or 6 miles occur 15-50 and 5-15 percent of the time, respectively; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 1-5 percent. These percentages are greater for Mukden, however. Aircraft turbulence below 5000 feet is common, especially along the western border of the region.

3. RECONNAISSANCE WEATHER. Poor due to extensive cloudiness. Occasionally fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days per month. The most favorable weather occurs from late evening to early morning.

4. TERMINAL WEATHER. Mukden, China. Fair due to frequent rain showers and occasional thunderstorms. Visibility is frequently restricted by haze, smoke, or fog in the early morning. Ceiling/visibility less than 300/1 occurs up to 12 percent of the time during early morning and 2-5 percent at all other times.

5. EXPOSURE WEATHER. Days are mostly warm to hot and humid with frequent, afternoon rain showers.

<u>MUKDEN, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	103	102	101
Mean Maximum	83	87	85
Mean Minimum	60	69	67
Absolute Minimum	44	51	49
<u>MEAN PRECIPITATION (INCHES)</u>	3.8	7.0	6.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	12	15	12
Thunderstorms	5	4	3

6. PARADROP WEATHER. Good in the morning. Fair in the afternoon due to rain showers. Smoke, haze, and fog occasionally restrict visibility, but seldom adversely affect paradrops. Conditions are favorable 60-80 percent of the time.

7. ASTRONOMICAL DATA. Mukden, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0337	0352	0425
Last Light	1957	1953	1918

(Prepared: 30 November 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in the Lowlands of Northeast China is a period of transition characterized by increasing cloudiness, falling temperatures, and strong winds. Average cloudiness is quite variable (30-70 percent) with peak coverage during early afternoon. Mean daily minimum temperatures range from 4F to 20F in November. In September minimum temperatures are in the 40's and 50's (F). Maximum temperatures range from 21F to 75F. Precipitation typically occurs as rain showers in September, while November has snow on an average of 5 days during the month. Thunderstorms occur on 3 days during September, but are very rare in November. Gale force winds (28 knots or greater) occur up to 3-6 percent of the time in November and less frequently in early autumn.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-30 percent of the time in September and only 5-15 percent of the time in November; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, less than 5 percent. Rain showers are frequent in September and cause brief periods of low cloud ceilings and visibilities. Aircraft icing and turbulence are often associated with the lows and cold fronts that increasingly traverse the region.

3. RECONNAISSANCE WEATHER. Fair due to cloud cover. Conditions tend to be best in the evening and early morning hours, but even then smoke and haze occasionally restrict visibility. Sky cover of 2/8 or less and visibility of 3 miles or greater occur an average of 8-22 days per month.

4. TERMINAL WEATHER. Mukden, China. Fair, except poor in the morning as a result of fog, haze, and smoke. The frequency of ceiling/visibility conditions less than 300/1 is nearly 30 percent for the early morning hours, but only 5 percent the remainder of the time. However, visibilities less than 2.5 miles occur 30-65 percent of the time at sunrise.

5. EXPOSURE WEATHER. Comfortable in September. Cold and windy by November.

<u>MUKDEN, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	93	87	78
Mean Maximum	75	62	41
Mean Minimum	53	39	21
Absolute Minimum	30	14	-15
<u>MEAN PRECIPITATION (INCHES)</u>	2.9	1.7	0.9
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	9	7	5
Snowfall	0	1	4
Thunderstorms	2	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Weather is favorable for paratroops from 65 to 80 percent of the time with best conditions occurring between late evening and early morning. Precipitation and strong winds during the afternoon are the main weather conditions affecting paratroops.

7. ASTRONOMICAL DATA. Mukden, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0459	0531	0606
Last Light	1825	1734	1657

(Prepared: 31 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA THE NORTHERN HIGHLANDS REGION OF NORTHEAST CHINA*

DECEMBER - FEBRUARY

1. GENERAL. Winter is partly cloudy and bitterly cold with frequent light snow. Cloud cover, while greatest during December, varies little over the season and usually is between 30 and 50 percent. Mean daily minimum temperatures regularly drop to -20F. Maximum temperatures seldom rise above 10-15F and frequently remain below zero. Light snow falls on 3-18 days a month with only meager accumulations. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Good to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time (25-35 percent in the west during the morning); less than 1500 feet/3 miles, 3-8 percent; and less than 500/1, about 5 percent (up to 10 percent in the west during January). The hills and mountains of the region are sometimes obscured by clouds and snow flurries.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 12-23 days a month. The best time for reconnaissance is during January in the early evening.

4. TERMINAL WEATHER. Wenchuan, China. Fair. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. However, frequent snow and occasional haze and smoke reduce the visibility to less than 6 miles.

5. EXPOSURE WEATHER. The extreme cold makes protective measures for both man and machine necessary. Wind chill temperatures range from -15 to -50F.

<u>WENCHUAN, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	39	27	37
Mean Maximum	7	-2	4
Mean Minimum	-17	-25	-21
Absolute Minimum	-42	-45	-40
MEAN PRECIPITATION (INCHES)	0.8	0.3	0.3
MEAN NUMBER OF DAYS			
Precipitation	18	18	11
Snowfall	14	18	10

6. PARADROP WEATHER. Good. Favorable paradrop conditions occur 70-95 percent of the time. Precipitation can occasionally affect paradrops, but it normally falls as light, dry snow and should not seriously affect operations.

7. ASTRONOMICAL DATA. Wenchuan, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0704	0708	0634
Last Light	1647	1711	1756

* Northeast China lies between 39-54°N and 116-135°E.

(Prepared: 31 December 1981)

MARCH - MAY

1. GENERAL. The arrival of spring in the Northern Highlands of Northeast China brings cloudy skies, slowly moderating temperatures, and a slight increase in precipitation throughout the season. Average cloud cover varies from 40-50 percent in March to 60-75 percent by May as rain shower activity increases. Mean daily minimum temperatures range from -15F to 40F. Maximums are usually in the 20's in March and rise to the mid 60's by May. Precipitation changes from snow to rain by late April and is frequent, but light. Thunderstorms do not normally occur until May. Winds of 17 knots or greater occur 10-15 percent of the time at most locations. Gale force winds (28 knots or greater) occur 5-10 percent of the time with highest frequencies in western sections of the region.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time in the morning and late afternoon, but 20-50 percent in the early afternoon; less than 1500/3, 5-10 percent; and less than 500/1, about 4 percent for all hours. Low clouds and precipitation often obscure the hilly and mountainous terrain causing poor visibility and the risk of aircraft icing.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs 5-20 days a month with an average of 5-10 such days in May.

4. TERMINAL WEATHER. Wenchuan, China. Fair. Ceiling/visibility less than 300/1 occurs only 1 percent of the time. However, ceilings less than 5000 feet occur 30-50 percent of the time in April and May particularly during the early afternoon. Frequent snow/rain showers and strong winds are the most common weather elements affecting the terminal.

5. EXPOSURE WEATHER. Until May, mostly subfreezing temperatures and strong winds limit outdoor activities.

<u>WENCHUAN, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	55	77	88
Mean Maximum	18	40	56
Mean Minimum	-9	16	30
Absolute Minimum	-41	-15	6
<u>MEAN PRECIPITATION (INCHES)</u>	0.5	0.7	1.2
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	10	9	12
Snowfall	10	8	9
Thunderstorms	0	0	3

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-90 percent of the time. Best conditions occur from late afternoon to midmorning; at other times frequent, light precipitation and strong winds are prevalent.

7. ASTRONOMICAL DATA. Wenchuan, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0543	0438	0349
Last Light	1835	1921	2004

(Prepared: 31 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy with warm temperatures and frequent precipitation. Mean cloud cover varies from 60 to 85 percent with peak amounts during the afternoon. Mean daily minimum temperatures range from 38F to 63F. Maximums are nearly always in the 70's (F) and occasionally in the low 80's during July. Rain showers ordinarily occur 15 days each month with average accumulations of 2-6 inches per month, causing flooding over much of the region. Thunderstorms occur on 5-10 days a month with highest frequencies during July. Summer shows a significant decrease in the frequency of strong winds, and gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair to poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-70 percent of the time in the afternoon and 20-40 percent in the morning; less than 1500/3, 5-20 percent; and less than 500/1, less than 2 percent except at Tu-li-tu where such conditions occur 15 percent of the time in the morning. Poorest conditions are in the afternoon due to rain showers and thunderstorms; aircraft icing and turbulence are associated with them.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 3-10 days a month. Occasionally, fair conditions exist between early evening and early morning.

4. TERMINAL WEATHER. Wenchuan, China. Fair to poor. Ceiling/visibility less than 300/1 occurs 2 percent of the time in the morning. Weather conditions deteriorate on many afternoons due to rain showers and thunderstorms.

5. EXPOSURE WEATHER. Comfortable although the frequent, heavy rain showers affect outdoor activities.

WENCHUAN, CHINA	JUN	JUL	AUG
TEMPERATURE (F)			
Absolute Maximum	88	88	88
Mean Maximum	68	74	74
Mean Minimum	44	50	48
Absolute Minimum	20	30	27
MEAN PRECIPITATION (INCHES)	3.3	3.4	5.0
MEAN NUMBER OF DAYS			
Precipitation	18	15	13
Thunderstorms	9	10	7

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrops 65-90 percent of the time. Rain showers and their low ceilings and visibilities restrict operations.

7. ASTRONOMICAL DATA. Wenchuan, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	JUN	JUL	AUG
First Light	0325	0341	0422
Last Light	2037	2029	1946

(Prepared: 31 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a period of transition from cloudy to partly cloudy days and warm to extremely cold temperatures by November. Cloud amounts average 35-70 percent. Mean daily minimum temperatures vary from 33-46F in September to -12 to 10F during November. Mean maximums are in the 60's in September, but plummet to the teens during November. Most precipitation falls as rain until November when snow predominates. Thunderstorms are rare. Gale force winds (28 knots or greater) occur less than 5 percent of the time and have the highest probability of occurrence during October.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-40 percent of the time during September and 5-15 percent during November; less than 1500/3, about 10 percent; and less than 500/1, 2-5 percent. Hills and mountain peaks are often obscured by low clouds and showers, making navigation by visual reference difficult. Icing is likely on prolonged flights through clouds since the freezing level lowers to a few thousand feet by October.

3. RECONNAISSANCE WEATHER. Poor to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur an average of 8-20 days a month. Conditions usually improve between October and November due to decreasing clouds.

4. TERMINAL WEATHER. Wenchuan, China. Fair. Ceilings less than 5000 feet occur 40 percent of the time during September and are often accompanied by afternoon rain showers. Visibility is restricted to less than 6 miles by smoke or haze about 10 percent of the time. However, ceiling/visibility less than 300/1 occurs no more than 3 percent of the time, usually in the early morning.

5. EXPOSURE WEATHER. Comfortable in September. Extremely cold and often windy by November.

WENCHUAN, CHINA	SEP	OCT	NOV
TEMPERATURE (F)			
Absolute Maximum	82	71	59
Mean Maximum	61	45	24
Mean Minimum	33	19	-1
Absolute Minimum	14	-8	-31
MEAN PRECIPITATION (INCHES)	1.6	0.9	0.4
MEAN NUMBER OF DAYS			
Precipitation	11	10	13
Snowfall	1	7	13
Thunderstorms	1	0	0

6. PARADROP WEATHER. Good to fair. Frequent precipitation and strong winds result in mostly fair conditions during September. Favorable paradrop conditions occur 60-85 percent of the time.

7. ASTRONOMICAL DATA. Wenchuan, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	SEP	OCT	NOV
First Light	0507	0547	0628
Last Light	1843	1744	1700

(Prepared: 29 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA SOUTHWESTERN HIGHLANDS REGION OF NORTHEAST CHINA*

DECEMBER - FEBRUARY

1. GENERAL. Partly cloudy skies, frigid temperatures, and infrequent precipitation characterize much of the region during the winter. Mean cloud cover varies between 20 and 45 percent with maximum coverage around midday. Mean daily minimum temperatures range from -10F to 10F. Maximums range from 13F to 38F. Precipitation is very light, usually falling as snow up to 3 days per month. Thunderstorms are extremely rare at all locations. Although gale force winds (28 knots or greater) occur less than 5 percent of the time, winds of 17 knots or greater occur on 5-10 days a month at some locations and may be accompanied by dust/sandstorms (visibility reduced to less than 5/8 mile) on 1-3 days a month.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 6 percent of the time; less than 1500/3, less than 5 percent; and less than 500/1, 1 percent. Haze and smoke frequently restrict visibility in the mornings while dust is a more common phenomenon during many afternoons. Occasionally, fronts traverse the area, briefly lowering ceilings and producing turbulence across the frontal zone.

3. RECONNAISSANCE WEATHER. Good to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater prevail 15-25 days per month with best conditions normally between late evening and very early morning.

4. TERMINAL WEATHER. Linxi, China. Good to fair. Ceiling/visibility less than 300/1 seldom occurs more than 1 percent of the time. Winds can become quite strong and gusty with speeds of 17 knots or greater on 7-13 days a month.

5. EXPOSURE WEATHER. Cold temperatures and strong winds make exposure conditions poor. Appropriate protective measures should be taken, since equivalent chill temperatures often reach -15F to -30F.

<u>LINXI, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE(F)			
Absolute Maximum	46	45	56
Mean Maximum	22	13	23
Mean Minimum	1	-10	-3
Absolute Minimum	-20	-26	-21
MEAN PRECIPITATION (INCHES)	0.1	0.1	0.1
MEAN NUMBER OF DAYS			
Precipitation	1	3	2
Snowfall	1	1	2
Sandstorms	2	0	2

6. PARADROP WEATHER. Fair due to strong winds. Conditions are favorable for paradrops 60-90 percent of the time with best conditions during evening and morning hours.

7. ASTRONOMICAL DATA. Linxi, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0701	0706	0637
Last Light	1705	1728	1807

* Northeast China lies between 39-54°N and 116-135°E.

(Prepared: 29 December 1981)

MARCH - MAY

1. GENERAL. Partly cloudy skies, occasional precipitation, and mild days with cold evenings characterize much of the area during the spring. Mean cloudiness varies from 30-50 percent in the mornings to 65 percent by midafternoon. Mean daily minimum temperatures range from the teens to near 50F. Maximums are 38-78F. Precipitation is usually snow in March, but is more likely to be rain by April. Thunderstorms are rare until May when 6 days with thunderstorms occur at some locations. Gale force winds (28 knots or greater) are infrequent and occur only 5 percent of the time; winds of 17 knots or greater, however, have been reported on 12 days a month. Dust storms occur between 5 and 7 days a month throughout the region and may persist for several hours each time.

2. FLYING WEATHER. Fair. Visibility is frequently restricted by haze, smoke, or fog in the mornings while dust storms periodically affect afternoon flying conditions by April. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500/3, up to 5 percent; and less than 500/1, about 2 percent. Low-level turbulence occurs regularly during the afternoon.

3. RECONNAISSANCE WEATHER. Fair to poor. Blowing dust and extensive cloud cover occur during the afternoon. Sky cover of 2/8 or less and visibility of 3 miles or greater occur between 8-22 days a month.

4. TERMINAL WEATHER. Linxi, China. Fair due to periodic strong winds and dust storms. Ceiling/visibility less than 300/1 occurs 2 percent of the time with such conditions most likely caused by restricted visibility.

5. EXPOSURE WEATHER. Windy, dusty, and mild to cold days are probably typical of much of the region and combine to make conditions quite uncomfortable.

<u>LINXI, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	69	86	97
Mean Maximum	38	55	67
Mean Minimum	13	30	42
Absolute Minimum	-12	7	17
MEAN PRECIPITATION (INCHES)	0.3	0.2	1.3
MEAN NUMBER OF DAYS			
Precipitation	4	2	8
Snowfall	4	2	0
Thunderstorms	0	1	3
Dust Storms	2	3	2

6. PARADROP WEATHER. Fair to poor. Conditions are favorable for paradrop operations 35-70 percent of the time. The best paradrop weather normally occurs during evenings and early mornings after the afternoon's strong winds and rain showers have subsided.

7. ASTRONOMICAL DATA. Linxi, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0551	0455	0410
Last Light	1842	1920	1958

(Prepared: 29 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is usually cloudy and rainy with warm to hot days and mostly mild evenings. Mean cloud cover varies from 40 to 70 percent. Mean daily minimum temperatures range from the mid 50's to near 70F. Maximums range from 80F to 85F. Precipitation, usually rain showers, occurs on 10-15 days each month. June typically experiences 15 thunderstorm days, but this decreases to five by August. Gale force winds (28 knots or greater) are rare but might accompany some of the strongest thunderstorms. Dust/sandstorms are reported on one day per month throughout the season.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500/3, less than 5 percent; and less than 500/1, less than 1 percent. Marginal conditions usually last for only brief periods during afternoons when rain shower/thunderstorm activity is at a maximum.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur between 9 and 14 days per month. Extensive cloud cover is the most common restriction to favorable conditions.

4. TERMINAL WEATHER. Linxi, China. Good in the morning. Fair during the afternoon due to frequent rain showers/thunderstorms. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time.

5. EXPOSURE WEATHER. Warm, rainy afternoons make conditions only moderately comfortable.

<u>LINXI, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	97	103	101
Mean Maximum	77	82	79
Mean Minimum	54	61	57
Absolute Minimum	34	45	36
<u>MEAN PRECIPITATION (INCHES)</u>	3.0	5.0	4.7
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	17	16	13
Thunderstorms	15	9	8

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrops 50-90 percent of the time with best conditions between late evening and midmorning. Operations are most affected by the frequent afternoon rain showers and thunderstorms which cause lowered ceilings/visibilities and occasional strong winds.

7. ASTRONOMICAL DATA. Linxi, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUN</u>	<u>AUG</u>
First Light	0350	0406	0442
Last Light	2026	2022	1943

(Prepared: 29 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL: Autumn is a period of partly cloudy skies, infrequent precipitation, and gradually falling temperatures throughout the season. Mean cloudiness averages 20-50 percent. Mean daily minimum temperatures range from 10F to 54F. Maximums range from 35F to the high 70's. Rain is the most common form of precipitation until November when snow prevails. Thunderstorms are infrequent and occur 1-3 days per month. Gale force winds (28 knots or greater) are infrequent and occur less than 3 percent of the time; winds of 17 knots or greater, however, may be as frequent as 6 percent of the time.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 3-20 percent of the time; less than 1500/3, 5 percent; and less than 500/1, less than 1 percent. Periodically, fronts cause low ceiling/visibility conditions and turbulence for brief periods. Frequent rain showers should be anticipated during September, especially during the afternoon.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 12-24 days a month. October tends to be slightly better than the other months of autumn.

4. TERMINAL WEATHER. Linxi, China. Good. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time. However, surface winds tend to be stronger at Linxi than at other locations within the region and may be 17 knots or greater 6 percent of the time.

5. EXPOSURE WEATHER. A generally comfortable time of the year although some evenings become quite cold during November.

<u>LINXI, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	90	84	72
Mean Maximum	69	58	35
Mean Minimum	44	30	13
Absolute Minimum	23	10	-11
MEAN PRECIPITATION (INCHES)	0.9	0.6	0.2
MEAN NUMBER OF DAYS			
Precipitation	7	4	2
Snowfall	0	1	2
Thunderstorms	2	1	0

6. PARADROP WEATHER. Good to fair. Paradrop conditions are favorable 70-95 percent of the time. Strong afternoon winds are the main factor limiting paradrops.

7. ASTRONOMICAL DATA. Linxi, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0718	0753	0631
Last Light	1848	1755	1715

(Prepared: 27 October 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA THE CENTRAL AND SOUTHERN MOUNTAINS OF SINKIANG*

DECEMBER - FEBRUARY

1. GENERAL. Winter in the Central and Southern Mountains Region of Sinkiang is partly cloudy, cold, and generally dry. Mean cloud cover varies from 35 to 70 percent. Mean daily minimum temperatures range between -9F and +10F. Maximums range from 19F to 38F. Light snow is common, but rain occasionally occurs in February. Thunderstorms are extremely rare. Gale force winds (28 knots or greater) are rare at most locations, but can occur up to one-third of the time at higher elevations.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500 feet/3 miles, 3-10 percent; and less than 500/1, 2-6 percent. These conditions are slightly more frequent at Kuldja. The rough terrain of this area occasionally causes moderate to severe turbulence.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur an average of 10-20 days per month. However, during the afternoon, increased cloud cover reduces the potential for success.

4. TERMINAL WEATHER. Kuldja, China. Morning fog can cause conditions to be poor on as many as 10 days per month. Ceiling/visibility less than 300/1 occurs 5-10 percent of the time.

5. EXPOSURE WEATHER. The extreme bitter cold and strong winds at higher elevations make exposure conditions precarious unless protective measures are taken.

<u>KULDJA, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	48	43	47
Mean Maximum	23	25	33
Mean Minimum	0	4	9
Absolute Minimum	-35	-25	-20
MEAN PRECIPITATION (INCHES)	0.9	0.3	1.1
MEAN NUMBER OF DAYS			
Precipitation	7	6	8
Snowfall	6	7	6

6. PARADROP WEATHER. Fair. Winds greater than 13 knots and frequent precipitation reduce the potential for successful operations. Conditions are favorable for paradrops 55-85 percent of the time.

7. ASTRONOMICAL DATA. Kuldja, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0929	0935	0905
Last Light	1931	1954	2033

* Sinkiang lies between 35-50°N and 75-95°E.

(Prepared: 27 October 1981)

MARCH - MAY

1. GENERAL. Spring in the Central and Southern Mountains Region of Sinkiang is cloudy with cool to mild temperatures and little precipitation. Mean cloud cover ranges from 50 to 75 percent. Mean daily minimum temperatures vary from 13F to 50F. Maximum temperatures range from 41F to 74F. It rains on 2-7 days a month, but snow is considerably less frequent. Thunderstorms are rare, occurring less than 2 days per month nearly everywhere. Gale force winds (28 knots or greater) are rare for most locations, but occur up to one-third of the time at higher elevations. Dust or sandstorms occur on 2-7 days per month.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 2-5 percent. Dust/sandstorms occur up to 6 days per month and can occasionally reduce visibility to less than 1 mile. Moderate to severe turbulence may be encountered over the ridge lines and in the vicinity of fronts that move across the rugged terrain of this region.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-20 days per month with poorest conditions occurring along the western and southern mountain ranges.

4. TERMINAL WEATHER. Kuldja, China. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. However, frequent rain or rain showers affect flying operations.

5. EXPOSURE WEATHER. Generally comfortable with mild days and cool nights by the end of the period. Winds may occasionally be strong at higher elevations.

<u>KULDJA, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	77	90	93
Mean Maximum	45	64	73
Mean Minimum	25	43	50
Absolute Minimum	-11	19	28
MEAN PRECIPITATION (INCHES)	0.9	0.9	0.9
MEAN NUMBER OF DAYS			
Precipitation	8	7	6
Snowfall	3	*	0
Thunderstorms	0	2	2

* = less than 0.5 days

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 50-80 percent of the time. Frequent precipitation and occasional gusty surface winds make conditions hazardous.

7. ASTRONOMICAL DATA. Kuldja, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0820	0723	0637
Last Light	2109	2148	2226

(Prepared: 27 October 1981)

JUNE - AUGUST

1. GENERAL. Summer in the Central and Southern Mountains Region of Sinkiang is partly cloudy with warm days and mild evenings. Mean cloud cover varies from 35 to 70 percent. Mean daily minimum temperatures range from 41F to 67F. Maximums range from 68F to 90F. Precipitation is nearly always rain or rain showers and occurs on 2-9 days a month. Thunderstorms occur on 1-4 days a month at most locations, but are slightly more frequent at Kuldja. Gale force winds (28 knots or greater) are rare at most locations except at higher elevations where they occur up to one-third of the time.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, less than 2 percent. Dust or sandstorms occur as often as 6 days a month and can lower visibility to less than 1 mile. Clouds associated with thunderstorms and rain showers sometimes obscure ridges and peaks, primarily in the afternoon. Orographic turbulence occurs within a few thousand feet of the surface during most afternoons.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur an average of 10-20 days per month. Late evening and early morning hours are best.

4. TERMINAL WEATHER. Kuldja, China. Good. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time. Frequent rain showers and thunderstorms can be hazardous, particularly during June.

5. EXPOSURE WEATHER. Generally warm days and mild evenings result in comfortable conditions for much of the region.

<u>KULDJA, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	97	99	99
Mean Maximum	78	83	83
Mean Minimum	56	62	60
Absolute Minimum	45	44	45
<u>MEAN PRECIPITATION (INCHES)</u>	1.7	0.2	0.4
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	9	3	5
Thunderstorms	8	4	3

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 50-85 percent of the time. Rain showers, gusty winds, and briefly low ceilings make conditions generally fair.

7. ASTRONOMICAL DATA. Kuldja, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0615	0630	0706
Last Light	2255	2250	2211

(Prepared: 27 October 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in the Central and Southern Mountains Region of Sinkiang is partly cloudy with warm temperatures in September turning cold by November. Mean cloudiness ranges from 20 to 60 percent with maximum cloud cover occurring in the afternoon. Mean daily minimum temperatures decrease during the period and vary from 53F to 6F. Maximums vary from 37F to 80F. Precipitation is slight, occurring as rain in September and October, but most often as snow in November. Thunderstorms are rare, occurring no more than 1 day per month at most locations. Gale force winds (28 knots or greater) are rare, but occur up to one-third of the time at higher elevations.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500 feet/3 miles, 2-5 percent; and less than 500/1, less than 3 percent. Islak Karaul has up to six dust or sandstorms per month, but other locations usually have fewer. Migratory storms move across the rough terrain of this region causing moderate to severe turbulence over the mountain ridges.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 15-22 days per month; late evening to midmorning is a period of minimal cloudiness.

4. TERMINAL WEATHER. Kuldja, China. Good. Ceiling/visibility less than 300/1 occurs 1-4 percent of the time.

5. EXPOSURE WEATHER. September and October are warm to mild, but cold days and nights are common by November.

<u>KULDJA, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	95	86	67
Mean Maximum	77	64	38
Mean Minimum	51	35	10
Absolute Minimum	27	17	-35
MEAN PRECIPITATION (INCHES)	0.1	0.9	1.5
MEAN NUMBER OF DAYS			
Precipitation	2	6	11
Snowfall	0	1	6
Thunderstorms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 50-85 percent of the time. Strong, gusty surface winds reduce the amount of good paradrop weather; ceiling/visibility is unfavorable only 5-10 percent of the time.

7. ASTRONOMICAL DATA. Kuldja, China. (Data as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0744	0819	0841
Last Light	2116	2022	1941

(Prepared: 13 October 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA
THE DZUNGARIAN BASIN REGION OF SINKIANG*

DECEMBER - FEBRUARY

1. GENERAL. Cloudy skies, bitter cold, and frequent snowfall are characteristic of the Dzungarian Basin Region of Sinkiang during the winter months. Mean cloudiness varies from 40 to 70 percent, but it is typically near 55 percent. Mean daily minimum temperatures range from -14F to +8F. Maximums range from 12F to 23F. Precipitation, usually snow, occurs 4-10 days per month. Thunderstorms are extremely rare throughout the winter. Gale force winds (28 knots or greater) are rare and, if they occur at all, would likely be associated with frontal passages and migratory storms.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-35 percent of the time; less than 1500 feet/3 miles, 5-20 percent; and less than 500/1, 5-10 percent. Fronts occasionally cause turbulence, especially over the more rugged portions of this region.

3. RECONNAISSANCE WEATHER. Fair to poor conditions prevail due to cloudiness. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-20 days per month. Conditions are slightly more favorable during the morning.

4. TERMINAL WEATHER. Urumchai, China. Fair due to low cloud ceilings and occasional high winds. In most respects, the weather at Urumchai is worse than at most other stations within the region. Ceiling/visibility less than 300/1 occurs 5-15 percent of the time.

5. EXPOSURE WEATHER. Temperatures do not usually rise above freezing through the winter. Strong winds coupled with the bitterly cold temperatures provide for extreme wind chill factors.

<u>URUMCHAI, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	43	41	52
Mean Maximum	17	13	17
Mean Minimum	8	-7	-3
Absolute Minimum	-33	-30	-43
<u>MEAN PRECIPITATION (INCHES)</u>	0.4	0.4	0.6
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	11	10	11
Snowfall	8	6	8

6. PARADROP WEATHER. Fair due to frequent precipitation. Conditions are favorable for paradrops 60-85 percent of the time.

7. ASTRONOMICAL DATA. Urumchai, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0903	0909	0840
Last Light	1906	1929	2008

* Sinkiang lies between 35-50°N and 75-95°E.

(Prepared: 13 October 1981)

MARCH - MAY

1. GENERAL. Spring in the Dzungarian Basin Region of Sinkiang is cloudy and cool through April but mild in May. Mean cloud cover varies from 50 to 70 percent. Average daily minimum temperatures increase from the teens in March to 50F in May. Maximums increase from 31F to 74F. Precipitation often occurs as snow in March, but it turns to rain in April and May. Thunderstorms are rare but occur up to 2 days per month in May. Gale force winds (28 knots or greater) are rare, occurring less than 2 percent of the time at most locations.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500 feet/3 miles, 5-15 percent; and less than 500/1, 2-10 percent. Turbulence, occasionally occurs, especially over the most rugged portions of the region.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 8-18 days per month.

4. TERMINAL WEATHER. Urumchai, China. Fair due to low ceilings and occasional gusty winds. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time. Snow can adversely affect terminal conditions and can occur up to 5 days during March.

5. EXPOSURE WEATHER. Spring is a transition season in which temperatures become warmer and winds slightly stronger. Showers increase in frequency. By the end of spring, weather conditions are comfortable.

<u>URUMCHAI, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	70	88	95
Mean Maximum	31	60	72
Mean Minimum	12	36	47
Absolute Minimum	-28	10	15
<u>MEAN PRECIPITATION (INCHES)</u>	0.6	1.3	1.0
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	7	8	5
Snowfall	5	3	1
Thunderstorms	0	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair due to occasional gusty winds and precipitation. Conditions are favorable for paradrops 55-85 percent of the time with best conditions during early morning hours.

7. ASTRONOMICAL DATA. Urumchai, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0755	0658	0612
Last Light	2043	2122	2200

(Prepared: 13 October 1981)

JUNE - AUGUST

1. GENERAL. Summers in the Dzungarian Basin Region of Sinkiang are typically partly cloudy, warm, and dry. Mean cloudiness varies between 40 and 65 percent, and afternoons are usually the cloudiest part of the day. Mean daily minimum temperatures range from 54F to 64F. Maximums range from 78F to 86F. Precipitation, usually rain showers, occurs on 5-10 days per month with thunderstorms just slightly less frequent (2-7 days a month). Gale force winds (28 knots or greater) are rare, occurring less than 2 percent of the time for most locations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 3-15 percent of the time; less than 1500 feet/3 miles, 2-5 percent; less than 500/1, less than 1 percent. Intense afternoon heating occasionally results in sandstorms/dust storms and at least light low-level turbulence.

3. RECONNAISSANCE WEATHER. Fair. Sky cover 2/8 or less and visibility 3 miles or greater occur an average of 12-17 days per month. The most favorable conditions occur in the morning.

4. TERMINAL WEATHER. Urumchai, China. Good. Ceiling/visibility less than 300/1 occur less than 1 percent of the time.

5. EXPOSURE WEATHER. Days and nights are mostly comfortable with low humidity.

URUMCHAI, CHINA	JUN	JUL	AUG
TEMPERATURE (F)			
Absolute Maximum	103	103	112
Mean Maximum	78	82	80
Mean Minimum	54	58	56
Absolute Minimum	40	46	42
MEAN PRECIPITATION (INCHES)	1.3	0.6	1.4
MEAN NUMBER OF DAYS			
Precipitation	5	7	5
Thunderstorms	1	2	1

6. PARADROP WEATHER. Good. Favorable paradrop conditions occur 65-90 percent of the time.

7. ASTRONOMICAL DATA. Urumchai, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	JUN	JUL	AUG
First Light	0551	0606	0641
Last Light	2229	2224	2146

(Prepared: 13 October 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Partly cloudy skies and mild (September and October) to cold (November) temperatures characterize the Dzungarian Basin Region of Sinkiang in autumn. Mean cloud cover varies from 35 to 70 percent with November the cloudiest month. Mean daily minimum temperatures range from 13F to 54F. Maximums range from 30F to 78F. Precipitation usually occurs as rain in September and October, but as snow during November; both occur an average of 5-10 days per

month. Thunderstorms are very infrequent throughout the fall. Gale force winds (28 knots or greater) are rare, occurring less than 2 percent of the time for most locations.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-30 percent of the time; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 1-5 percent. Fronts occasionally cause moderate to severe turbulence especially over the rugged sections of the region. By November, snow frequently restricts the visibility at some sites.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days per month.

4. TERMINAL WEATHER. Urumchai, China. Fair due to frequent precipitation in November and occasionally strong surface winds. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time.

5. EXPOSURE WEATHER. Mild to cool temperatures prevail in September and October, but the month of November is often quite cold and windy.

<u>URUMCHAI, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	95	81	63
Mean Maximum	69	50	30
Mean Minimum	47	31	13
Absolute Minimum	23	-1	-34
<u>MEAN PRECIPITATION (INCHES)</u>	0.6	1.9	0.9
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	4	9	12
Snowfall	0	4	7
Thunderstorms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Fair due to frequent precipitation. Conditions are favorable for paradrop 50-80 percent of the time.

7. ASTRONOMICAL DATA. Urumchai, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0719	0754	0832
Last Light	2050	1956	1916

(Prepared: 7 November 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA THE NORTHERN MOUNTAINS REGION OF SINKIANG*

DECEMBER - FEBRUARY

1. GENERAL. Winter is fair to partly cloudy, bitterly cold, and dry. Cloud cover varies little throughout the season and averages about 50 percent. Mean daily minimum temperatures range from -32F to 8F. Maximum temperatures range from -4F to 27F. Precipitation usually occurs as light snow flurries. Thunderstorms and gale force winds (28 knots or greater) are extremely rare; however, winds can approach gale intensity during strong frontal passages associated with migratory storm systems.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500/3, 2-10 percent; and less than 500/1, 2-6 percent. Moderate to severe turbulence occasionally accompanies strong fronts and storm systems.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 12-20 days per month.

4. TERMINAL WEATHER. Sharasume, China. Good. Ceiling/visibility less than 300/1 may occurs 2-4 percent of the time. Snow occasionally lowers visibility to less than 3 miles, but this seldom occurs on more than 5 days a month.

5. EXPOSURE WEATHER. This region is one of the most uninhabitable locations in China due to the extremely low temperatures. Exposure to the elements for even brief periods necessitates the use of special clothing and equipment. Wind chill temperatures drop as low as -30F at night and average 5F to -10F in the daytime.

<u>SHARASUME, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	42	28	34
Mean Maximum	15	10	18
Mean Minimum	-4	-11	-4
Absolute Minimum	-38	-40	-38
<u>MEAN PRECIPITATION (INCHES)</u>	1.0	1.1	0.9
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	12	10	9
Snowfall	9	7	6

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops 50-80 percent of the time. Frequent precipitation and winds in excess of 13 knots make the paratroop weather fair.

7. ASTRONOMICAL DATA. Sharasume, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0913	0918	0843
Last Light	1851	1916	2001

* Sinkiang lies between 35-50°N and 75-95°E.

(Prepared: 7 November 1981)

MARCH - MAY

1. GENERAL. Spring is partly cloudy, cool, and dry. Mean cloud cover is usually about 55 percent, but is slightly greater at midday than at other times. Mean daily minimum temperatures vary from -4F (in extreme northern mountains) to 48F. Maximum temperatures vary from 26F to 73F. Rain and snow occur with about equal frequency in March; rain predominates in April and May. Thunderstorms are infrequent, occurring only 1-3 days a month. Gale force winds (28 knots or greater) are extremely rare, occurring less than 1 percent of the time. Winds can be strong and gusty as fronts move through the region in March, but diminish thereafter.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500/3, 3-10 percent; and less than 500/1, 1-5 percent. Fronts sometimes cause turbulence and an occasional thunderstorm, especially during the spring.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days per month. Extensive cloud cover makes reconnaissance weather fair.

4. TERMINAL WEATHER. Sharasume, China. Good. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time, most likely occurring during early morning hours.

5. EXPOSURE WEATHER. Subfreezing temperatures and frequent precipitation are common until May when temperatures become mild.

<u>SHARASUME, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	66	81	88
Mean Maximum	32	54	66
Mean Minimum	11	35	45
Absolute Minimum	-26	9	24
<u>MEAN PRECIPITATION (INCHES)</u>	0.7	0.5	0.4
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	8	7	5
Snowfall	5	2	0
Thunderstorms	0	2	2

6. PAKADROP WEATHER. Good to fair. Conditions are favorable for paratroops 60-90 percent of the time. Winds in excess of 13 knots during the afternoon make conditions fair.

7. ASTRONOMICAL DATA. Sharasume, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0752	0648	0554
Last Light	2043	2129	2215

(Prepared: 30 December 1981)

JUNE-AUGUST

1. GENERAL. Summer is partly cloudy with warm days and mild nights. Mean cloud cover varies from 40 to 70 percent with maximum cloudiness during the afternoon. Mean daily minimum temperatures range from 44F to 64F. Maximums temperatures vary from 72F to 88F. Rain showers and thunderstorms occur with about equal frequency (5-10 days per month). Gale force winds (28 knots or greater) are extremely rare, but speeds approaching gale force occasionally occur during times of intense afternoon heating.

2. FLYING WEATHER. Fair. Frequent localized rain showers and thunderstorms make conditions fair in the afternoons. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, less than 2 percent. Low-level (below 5000 feet) turbulence occurs during the afternoon, especially over the mountains.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-15 days per month. Cloud cover peaks during the afternoon; therefore, evening and morning are the best times for reconnaissance.

4. TERMINAL WEATHER. Sharasume, China. Good to fair. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time, usually in the afternoon. Afternoon rain showers and/or thunderstorms affect terminal conditions.

4. EXPOSURE WEATHER. Warm days and mild nights with an occasional rain shower make this the most comfortable season in Sinkiang.

<u>SHARASUME, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	95	95	96
Mean Maximum	76	80	80
Mean Minimum	53	59	57
Absolute Minimum	36	45	41
MEAN PRECIPITATION (INCHES)	1.1	0.5	0.5
MEAN NUMBER OF DAYS			
Precipitation	10	7	7
Thunderstorms	6	8	7

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrrops 60-90 percent of the time. Rain showers and winds exceeding 13 knots restrict paradrrops.

7. ASTRONOMICAL DATA. Sharasume, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0527	0544	0627
Last Light	2249	2242	2156

(Prepared: 30 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in the Northern Mountains of Sinkiang is fair to partly cloudy with cool days and cold nights. Mean cloud cover varies from 30-60 per-

cent, but averages about 40 percent. Mean daily minimum temperatures range from -3F (at higher elevations in the north) to 52F. Maximums temperatures vary from 18F to 74F. Precipitation is predominantly rain in September and October, but is frequently very light snow in November. Thunderstorms are infrequent; about three occur during September. Gale force winds (28 knots or greater) occur less than 1 percent of the time.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 3-12 percent of the time; less than 1500 feet/3 miles, 2-7 percent; and less than 500/1, 1-4 percent. Migratory storms occasionally cause moderate to severe turbulence.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-18 days per month. Favorable conditions occur between late evening and early morning when cloudiness diminishes.

4. TERMINAL WEATHER. Sharasume, China. Good. Ceiling/visibility less than 300/1 usually occurs less than 3 percent of the time. Rain showers in September and snow in November are somewhat frequent and can briefly cause low ceiling/visibility conditions.

5. EXPOSURE WEATHER. Autumn is characterized by rapidly falling temperatures so that, by November, all locations experience subfreezing temperatures both day and night. Wind chill temperatures go as low as -10F during the night in November.

<u>SHARASUME, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE(F)</u>			
Absolute Maximum	95	82	59
Mean Maximum	71	54	29
Mean Minimum	49	33	11
Absolute Minimum	21	9	-35
<u>MEAN PRECIPITATION (INCHES)</u>	0.7	0.3	0.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	9	3	10
Snowfall	*	2	7
Thunderstorms	3	1	0

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Favorable paradrop conditions occur 60-80 percent of the time. Rain or snow and occasional winds greater than 13 knots can restrict paradrops during the afternoon.

7. ASTRONOMICAL DATA. Sharasume, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0712	0754	0839
Last Light	2053	1952	1905

(Prepared: 26 October 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA
TARIM BASIN REGION OF SINKIANG*

DECEMBER - FEBRUARY

1. GENERAL. Winter in the Tarim Basin Region of Sinkiang is partly cloudy, arid, and cold with infrequent snowfall. Mean cloud cover varies greatly, but is usually about 50 percent. Mean daily minimum temperatures range from -3F to +24F. Maximums range from 21F to 47F. Precipitation, usually snow, falls on 1-11 days a month. Thunderstorms are extremely rare. Gale force winds (28 knots or greater) are rare; maximum surface winds seldom exceed 20 knots.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 1-5 percent. Dust storms and sandstorms occur 1-7 days a month, at times lowering visibility to 0.5 mile or less.

3. RECONNAISSANCE WEATHER. Fair. Extensive cloud cover, especially during the afternoon, and occasionally low visibilities resulting from sand and dust storms are limiting factors. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days per month.

4. TERMINAL WEATHER. Khotan, China. Good. Ceiling/visibility less than 300/1 occurs less than 3 percent of the time even though Khotan generally has the greatest amount of cloudiness of any station in the region. Sand and dust storms occur on 5 days per month.

5. EXPOSURE WEATHER. Cold and dry.

<u>KHOTAN, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	59	70	68
Mean Maximum	39	34	43
Mean Minimum	20	14	24
Absolute Minimum	-1	-5	7
<u>MEAN PRECIPITATION (INCHES)</u>	*	*	0.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	2	4	3
Snowfall	1	1	1

* = less than 0.05 inch

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 70-90 percent of the time. December is the best month.

7. ASTRONOMICAL DATA. Khotan, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0917	0925	0903
Last Light	1953	2015	2046

* Sinkiang lies between 35-50°N and 75-95°E. The Tarim Basin comprises most of central Sinkiang.

(Prepared: 26 October 1981)

MARCH - MAY

1. GENERAL. Spring in the Tarim Basin Region of Sinkiang is cloudy and mild with little precipitation. Mean cloudiness ranges from 40-60 percent in the morning to 55-80 percent in the afternoon. Mean daily minimum temperatures vary from 23F to 60F. Mean daily maximums vary from 55F to 80F. Precipitation usually rain, occurs on 1-3 days per month. Thunderstorms are rare, occurring a maximum of 3 days a month in May. Gale force winds (28 knots or greater) are rare, but wind speeds of 16 knots or greater occur up to 10 percent of the time in the afternoon causing 5-15 dust/sandstorms per month.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-35 percent of the time; less than 1500 feet/3 miles, 5-20 percent; and less than 500/1, 5-15 percent. Frequent frontal passages contribute to the high incidence of sand and dust storms which reduce visibility significantly.

3. RECONNAISSANCE WEATHER. Fair. Limitations are due to cloud cover and reduced visibility in dust/sandstorms. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 8-18 days per month with evening hours only slightly better than at other times.

4. TERMINAL WEATHER. Khotan, China. Fair. Ceiling/visibility less than 300/1 may occur 10-15 percent of the time with the least favorable conditions likely between late morning and midafternoon. In addition, sand or dust storms cause hazardous conditions of reduced visibility and strong winds.

5. EXPOSURE WEATHER. Days are usually warm and evenings cool to mild. The high frequency of dust/sandstorms warrants protective measures.

KHOTAN, CHINA	MAR	APR	MAY
TEMPERATURE (F)			
Absolute Maximum	81	93	94
Mean Maximum	61	73	78
Mean Minimum	37	49	55
Absolute Minimum	25	32	37
MEAN PRECIPITATION (INCHES)	*	0.1	*
MEAN NUMBER OF DAYS			
Precipitation	1	2	1
Thunderstorms	0	0	1
Dust/sandstorms	16	13	15

* = less than 0.05 in-h

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-80 percent of the time. Sand and dust storms cause the unfavorable conditions.

7. ASTRONOMICAL DATA. Khotan, China. (Date as of the 15th, local standard time)

CIVIL TWILIGHT	MAR	APR	MAY
First Light	0827	0740	0704
Last Light	2113	2141	2210

(Prepared: 23 October 1981)

JUNE - AUGUST

1. GENERAL. Cloudy, hot days and mild evenings characterize much of the Tarim Basin Region of Sinkiang during the summer. Mean cloud cover varies from 35 to 70 percent. Mean daily minimum temperatures are 56F to 77F. Maximums are 83F to 102F. Precipitation, usually rain showers, occurs on 2-6 days a month; thunderstorms occur with about the same frequency. Gale force winds (28 knots or greater) are rare, occurring less than 1 percent of the time. Winds of at least 17 knots occur up to 5 percent of the time, however, resulting in dust/sandstorms on 5-10 days per month.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500 feet/3 miles, 5-15 percent; and less than 500/1, 5-10 percent. June has the poorest flying weather because of dust/sandstorms and resultant reduced visibilities.

3. RECONNAISSANCE WEATHER. Fair. Cloud cover and blowing dust/sand make conditions fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days per month.

4. TERMINAL WEATHER. Khotan, China. Fair. Haze and dust/sandstorms reduce visibility to 3-6 miles about 40 percent of the time. Ceiling/visibility less than 300/1 occurs 5-10 percent of the time.

5. EXPOSURE WEATHER. Most days are hot, dry, and somewhat dusty.

<u>KHOTAN, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	102	102	100
Mean Maximum	87	90	87
Mean Minimum	63	67	64
Absolute Minimum	52	55	48
MEAN PRECIPITATION (INCHES)	1.1	0.1	0.2
MEAN NUMBER OF DAYS			
Precipitation	6	2	3
Thunderstorms	3	0	1
Dust/sandstorms	9	15	11

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-85 percent of the time. However, visibility is frequently reduced by haze, blowing dust, and blowing sand.

7. ASTRONOMICAL DATA. Khotan, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0649	0701	0728
Last Light	2232	2230	2201

(Prepared: 23 October 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in the Tarim Basin Region of Sinkiang is partly cloudy and warm in September. By November temperatures become cool to cold. Cloud cover varies from 15 to 50 percent, but averages about 40 percent. Temperatures drop

sharply; mean daily minimum temperatures decrease from 61F to 16F and maximums decrease from 90F to 45F. Precipitation usually falls as rain, but 1-2 days with snow are likely during November. As many as five thunderstorms per month occur during September, but rarely during the remainder of the season. Gale force winds (28 knots or greater) are rare, occurring less than 1 percent of the time. Blowing dust and sandstorms occur on 5 days per month.

2. FLYING WEATHER. Good to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 1-5 percent. Dust/sandstorms frequently reduce visibilities, especially in September and October.

3. RECONNAISSANCE WEATHER. Good. Morning and evening are the best times. The afternoon is fair due to cloud cover and a greater likelihood of blowing dust/sand. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 15-25 days per month. October is the best month.

4. TERMINAL WEATHER. Khotan, China. Fair. Ceiling/visibility less than 300/1 occurs 1-5 percent of the time. Visibility less than 3 miles occurs up to 15 percent of the time, usually due to blowing dust or sand.

5. EXPOSURE WEATHER. Comfortable in September; cold by November. Dust and sandstorms, especially in September, affect personnel and equipment exposed to the outdoors.

<u>KHOTAN, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	93	82	70
Mean Maximum	82	68	50
Mean Minimum	56	42	28
Absolute Minimum	46	27	16
MEAN PRECIPITATION (INCHES)	0.5	0.0	*
MEAN NUMBER OF DAYS			
Precipitation	2	0	1
Snowfall	0	0	*
Dust/sandstorms	9	6	2

* = less than 0.05 inch or 0.5 day

6. PARADROP WEATHER. Good. Favorable 65-90 percent of the time. Dust and sandstorms rarely reduce visibility to less than 1 mile. However, associated winds can be greater than 13 knots.

7. ASTRONOMICAL DATA. Khotan, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0756	0821	0851
Last Light	2115	2031	1959

(Prepared: 13 November 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA CENTRAL UPLANDS REGION OF SOUTH CHINA*

NOVEMBER - MARCH

1. **GENERAL.** The Central Uplands Region is cloudy, cool, and wet with rain occurring nearly 15 days each month during the winter monsoon. Average cloud cover varies from 55-85 percent with the lower amounts occurring in November and December. Mean daily minimum temperatures range from 20F to 55F, and maximums from 32F to 74F. Precipitation usually occurs as rain, but most stations have snow on 1-5 days a month from December through March. Thunderstorms are rare from November through January, but they occur about 5 days a month in February and March. Gale force winds (28 knots or greater) are infrequent throughout the region but can occur at a few stations along or near the coast.

2. **FLYING WEATHER.** Generally good. Fair over mountainous terrain. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-60 percent of the time; less than 1500 feet/3 miles, 5-20 percent at most locations, but 20-50 percent along the coast; and less than 500/1, 5-10 percent, but up to 40 percent in the southeast and mountains. The least favorable conditions tend to occur during the morning hours and in the latter part of the season.

3. **RECONNAISSANCE WEATHER.** Fair to poor due to cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days per month with November and December being the most favorable months.

4. **TERMINAL WEATHER.** Nan-ch'eng, China. Fair due to occasional low ceilings. Ceiling/visibility less than 300/1 occurs 2-10 percent of the time with highest frequencies in December and January.

5. **EXPOSURE WEATHER.** The winter monsoon is quite uncomfortable with freezing temperatures at night and daytime highs commonly in the 50's and 60's.

<u>NAN-CH'ENG, CHINA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)					
Absolute Maximum	86	75	79	84	88
Mean Maximum	65	55	50	54	62
Mean Minimum	49	40	36	40	48
Absolute Minimum	25	24	18	23	32
MEAN PRECIPITATION (INCHES)	2.5	1.5	3.1	4.9	8.6
MEAN NUMBER OF DAYS					
Precipitation	12	7	16	15	20
Thunderstorms	N/A	N/A	N/A	N/A	N/A

N/A = data not available

6. **PARADROP WEATHER.** Good to fair. Conditions are favorable for paradrop operations 50-70 percent of the time. Ceilings less than 1500 feet may occur frequently at mountain stations, making operations unfavorable.

* South China lies between 18-34°N and 98-123°E.

7. ASTRONOMICAL DATA. Nan-ch'eng, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0609	0630	0640	0628	0601
Last Light	1747	1747	1806	1828	1845

(Prepared: 13 October 1981)

APRIL - MAY

1. GENERAL. The Central Uplands Region is typically cloudy and damp with warm days and mild evenings during the spring transition period. Mean cloud cover ranges from 60-90 percent, but it is usually about 80 percent. Mean daily minimum temperatures vary between 40F and 70F, while mean maximums are 55F to 85F. Precipitation occurs as rain or rain showers on 5-10 days per month and is occasionally accompanied by thunderstorms. Gale force winds (28 knots or greater) are infrequent throughout the region but occur at a few stations along or near the coast 5-15 times during the season.

2. FLYING WEATHER. Good to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-30 percent of the time (30-70 percent in the eastern part of the region); less than 1500 feet/3 miles, 5-20 percent (except at Heng-shan and Ch'ih-shui where these conditions can occur 50-70 percent of the time); and less than 500/1, 5-10 percent (30-50 percent at Heng-shan and Ch'ih-shui). Low-level turbulence becomes increasingly common with the approach of summer, especially during the afternoon over rugged terrain. Aircraft icing is not common at altitudes above 12,000 feet.

3. RECONNAISSANCE WEATHER. Poor due to cloudiness. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 2-8 days per month.

4. TERMINAL WEATHER. Nan-ch'eng, China. Good. Ceiling/visibility less than 300/1 occurs less than 3 percent of the time during the early morning hours.

5. EXPOSURE WEATHER. Spring, although short, is usually very comfortable, but it can still be humid and wet. Items exposed to the outdoors should be protected from the frequent rain that is so common to this region.

<u>NAN-CH'ENG, CHINA</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	92	93
Mean Maximum	72	78
Mean Minimum	58	65
Absolute Minimum	39	50
<u>MEAN PRECIPITATION (INCHES)</u>	6.6	11.7
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	14	17
Thunderstorms	N/A	N/A

N/A = data not available

6. PARADROP WEATHER. Fair due to frequent rain and rain showers. Favorable conditions for paradrop operations occur 50-70 percent of the time.

7. ASTRONOMICAL DATA. Nan-ch'eng, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

First Light
Last Light

APR

0526
1902

MAY

0500
1920

(Prepared: 13 October 1981)

JUNE - AUGUST

1. GENERAL. Summers in the Central Uplands are cloudy, hot, and humid with frequent afternoon thunderstorms (5-15 days a month). Mean cloud cover varies from 60-90 percent and usually peaks during the early afternoon. Mean daily minimum temperatures range from 56F to 80F; mean daily maximums, 64F to 97F. Gale force winds (28 knots or greater) are infrequent for most of the region but can occur at a few coastal stations. Although typhoons seldom move very far inland, they produce low clouds, strong winds, and thunderstorms, especially along coastal sections. Flash floods are fairly common as a result of intense thunderstorms.

2. FLYING WEATHER. Good to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-40 percent of the time; less than 1500 feet/3 miles, 5-20 percent; and less than 500/1, 5-15 percent (although is most frequently near 5 percent). All of these conditions occur up to twice as frequently at eastern and coastal locations. Low-level turbulence is relatively common during the afternoon and can be severe near mountain ridges.

3. RECONNAISSANCE WEATHER. Fair to poor due to extensive clouds. Sky cover 2/8 or less and visibility of 3 miles or greater occur 3-15 days per month.

4. TERMINAL WEATHER. Nan-ch'eng, China. Generally good. Occasionally fair during the afternoon due to frequent thunderstorms and rain showers. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time for all hours.

5. EXPOSURE WEATHER. Afternoons are usually hot and humid while nights are mild, especially at higher elevations. Items exposed to the outdoors should be protected from the rain and high humidity.

<u>NAN-CH'ENG, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	100	103	107
Mean Maximum	87	94	93
Mean Minimum	73	77	77
Absolute Minimum	60	69	68
<u>MEAN PRECIPITATION (INCHES)</u>	13.1	5.2	5.4
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	16	13	13
Thunderstorms	N/A	N/A	N/A

N/A = data not available

6. PARADROP WEATHER. Fair to poor due to frequent rain showers and afternoon thunderstorms. Conditions are favorable for paradrops 50-80 percent of the time at most locations. However, Huang-shan, Heng-shan, and Ch'ih-shui experience favorable conditions only 20-40 percent of the time.

7. ASTRONOMICAL DATA. Nan-Ch'eng, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0451	0501	0519
Last Light	1937	1937	1917

(Prepared: 13 October 1981)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn in the Central Uplands Region is a period of transition. September is cloudy, hot, and humid while October is characterized by decreasing cloudiness and milder temperatures. Mean cloud cover varies from 50 to 80 percent. Mean daily minimum temperatures range from 43F to 73F. Mean maximums range from 53F to 90F. Precipitation occurs as rain on 5-15 days per month. Thunderstorms are frequent in September, but decrease in October. Gale force winds (28 knots or greater) are infrequent but occur a few times along the coast. Typhoons seldom affect conditions very far inland, but they occasionally produce low clouds, strong thunderstorms, and flood conditions near the coastline and adjacent islands.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-40 percent of the time; less than 1500 feet/3 miles, 5-30 percent; and less than 500/1, 2-5 percent. Exceptions are Huang-shan, Heng-shan, and Ch'ih-shui which are less than 500/1 up to 60 percent of the time.

3. RECONNAISSANCE WEATHER. Generally fair due to cloud cover over much of the region. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days per month.

4. TERMINAL WEATHER. Nan-ch'eng, China. Good. Occasionally marginal during the afternoon due to rain showers and thunderstorms. Ceiling/visibility less than 300/1 seldom occurs more than 1 percent of the time.

5. EXPOSURE WEATHER. Days are warm to hot and nights generally comfortable. It rains about 10 days per month.

<u>NAN-CH'ENG, CHINA</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	98	95
Mean Maximum	86	76
Mean Minimum	71	59
Absolute Minimum	55	39
<u>MEAN PRECIPITATION (INCHES)</u>	3.0	1.9
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	9	9
Thunderstorms	N/A	N/A

N/A = data not available

6. PARADROP WEATHER. Generally good. Conditions are favorable for paradrops 65-85 percent of the time. Exceptions are Huang-shan, Heng-shan, and Ch'ih-shui where conditions are favorable 30-50 percent.

7. ASTRONOMICAL DATA. Nan-ch'eng, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

SEP

OCT

First Light
Last Light

0535
1843

0550
1809

(Prepared: 9 October 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA NORTHEAST LOWLANDS REGION OF SOUTH CHINA*

NOVEMBER - MARCH

1. GENERAL. The winter monsoon is a period of cloudy skies, cool temperatures, and moderate humidity. Mean cloudiness varies from 50 to 80 percent with March being the cloudiest month. Mean daily minimum temperatures range from 26F to 54F. Maximums range from 40F to 64F. Precipitation usually occurs as light rain. However, nearly every location can expect 1-5 days of snow per month. Thunderstorms are rare. Gale force winds (28 knots or greater) are extremely rare for all locations.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-40 percent of the time (however, Shanghai's visibility is less than 6 miles during morning about 90 percent of the time); less than 1500 feet/3 miles, 10-25 percent; and less than 500/1, 5-10 percent. Worst conditions are almost always during early morning.

3. RECONNAISSANCE WEATHER. Poor to fair due to cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days per month.

4. TERMINAL WEATHER. Shanghai, China. Fair with occasional low ceilings/visibilities and up to 10 days of precipitation per month. Precipitation is either rain or snow. Ceiling/visibility less than 300/1 occurs 25 percent of the time during morning hours, but 5-10 percent during the remainder of the day.

5. EXPOSURE WEATHER. Most days are cool to cold with frequent light rain. Snow falls 1-5 days per month at several locations.

<u>SHANGHAI, CHINA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>					
Absolute Maximum	86	75	74	83	90
Mean Maximum	64	52	47	48	57
Mean Minimum	46	37	32	34	40
Absolute Minimum	23	14	10	13	21
<u>MEAN PRECIPITATION (INCHES)</u>	2.1	1.5	1.9	2.4	3.3
<u>MEAN NUMBER OF DAYS</u>					
Precipitation	8	8	10	10	12
Snowfall	*	1	2	2	1
Thunderstorms	*	*	0	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Good. Occasionally fair due to rain or snow. Paradrops conditions are favorable 60-80 percent of the time.

7. ASTRONOMICAL DATA. Shanghai, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0555	0618	0627	0612	0541
Last Light	1722	1726	1740	1806	1826

* South China lies between 18-34°N and 98-123°E.

(Prepared: 9 October 1981)

APRIL - MAY

1. GENERAL. Spring cloudy with warm days and cool nights, and a slight increase in rain showers and thunderstorms by May. Mean cloud cover ranges from 65 to 85 percent and is typically 80 percent along the coast. Mean daily minimum temperatures vary between 46F and 67F. Maximums vary from 58F to 80F. Precipitation occurs as rain or rain showers and is frequent at most locations. Snow is rare. Thunderstorms are infrequent with most locations reporting about two storms per month. Gale force winds (28 knots or greater) are extremely rare. Due to heavy rains, widespread flooding is a problem unique to the lowlands and especially to those locations near the Yangtze River and other large bodies of water.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-45 percent of the time; less than 1500 feet/3 miles, 5-20 percent; and less than 500/1, 3-10 percent. The best ceiling/visibility occurs in the afternoon. Aircraft icing probability is greatest during the spring due to an increase in cloudiness.

3. RECONNAISSANCE WEATHER. Poor due to cloudiness. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 3-10 days per month.

4. TERMINAL WEATHER. Shanghai, China. Fair due to cloud cover and somewhat low ceilings in the early morning hours. Ceiling/visibility less than 300/1 occurs 5-20 percent of the time.

5. EXPOSURE WEATHER. Both days and nights are comfortable with mild to cool temperatures. Coastal sections tend to be humid and rain is quite frequent.

<u>SHANGHAI, CHINA</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)		
Absolute Maximum	95	96
Mean Maximum	67	77
Mean Minimum	49	59
Absolute Minimum	30	37
MEAN PARCIPITATION (INCHES)	3.6	3.8
MEAN NUMBER OF DAYS		
Precipitation	13	12
Snowfall	*	0
Thunderstorms	2	2

* = less than 0.5 day

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrops 65-80 percent of the time. Frequent rain or rain showers affect paradrops.

7. ASTRONOMICAL DATA. Shanghai, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0503	0433
Last Light	1847	1909

(Prepared: 9 October 1981)

JUNE - AUGUST

1. GENERAL. The summer monsoon season is cloudy, hot, and humid with frequent rain showers and thunderstorms. Flooding is a common problem for areas near the Yangtze River and other lakes and tributaries. Mean cloud cover varies from about 60 percent in the early morning to 70-80 percent during the day. Mean daily minimum temperatures are generally between 65F and 80F. Maximums range from 75F to 95F. Precipitation occurs as rain or rain showers and is often accompanied by frequent thunderstorms (5-15 per month). Gale force winds (28 knots or greater) are extremely rare, but have the highest probability of occurrence during the summer due to thunderstorms and typhoon-associated weather that affect primarily the coastal areas.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-35 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 2-7 percent. Cloud ceilings can be briefly lower during rain showers or thunderstorms.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 4-12 days per month.

4. TERMINAL WEATHER. Shanghai, China. Good. Ceiling/visibility less than 300/1 occurs 2-8 percent of the time. Worst conditions are in the mornings.

5. EXPOSURE WEATHER. Evenings are warm, but most days are hot and humid with afternoon rain showers or thunderstorms.

<u>SHANGHAI, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	103	104	104
Mean Maximum	83	91	91
Mean Minimum	67	75	75
Absolute Minimum	51	61	61
<u>MEAN PRECIPITATION (INCHES)</u>	7.0	5.8	5.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	14	11	11
Thunderstorms	3	6	5

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 55-75 percent of the time.

7. ASTRONOMICAL DATA. Shanghai, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0422	0433	0454
Last Light	1927	1927	1903

(Prepared: 9 October 1971)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn exhibits partly cloudy to cloudy skies, mild to warm days and nights, and decreasing thunderstorm activity. Mean cloud cover varies from 45-80 percent. Mean daily minimum temperatures range from 51F to 71F. Mean

maximums range from 70 to 86F. Precipitation usually occurs as rain from 3-13 days per month, while thunderstorms become less frequent (1-3 per month). Gale force winds (28 knots or greater) are extremely rare everywhere.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-30 percent of the time; less than 1500 feet/3 miles, 3-15 percent; and less than 500/1, 1-5 percent.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater can be expected 5-12 days per month with the most favorable conditions occurring during late afternoon/early evening.

4. TEPMINAL WEATHER. Shanghai, China. Good. Ceiling/visibility less than 300/1 typically occurs 2-5 percent of the time except in the early morning when such conditions occur up to 20 percent of the time.

5. EXPOSURE WEATHER. Generally comfortable with warm days and mild evenings. Humidity remains moderately high and rain is frequent.

SHANGHAI, CHINA

SEP

OCT

TEMPERATURE (F)

Absolute Maximum

100

93

Mean Maximum

83

75

Mean Minimum

67

56

Absolute Minimum

44

34

MEAN PRECIPITATION (INCHES)

5.2

2.9

MEAN NUMBER OF DAYS

Precipitation

12

9

Thunderstorms

2

*

* = less than 0.5 day

6. PARADROP WEATHER. Good to fair due to low ceilings during the morning and rain showers in the afternoon. Conditions are favorable for paradrops 50-80 percent of the time.

7. ASTRONOMICAL DATA. Shanghai, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

SEP

OCT

First Light

0514

0532

Last Light

1825

1748

(Prepared: 9 October 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA NORTHWEST MOUNTAINS AND SZECHWAN BASIN REGION OF SOUTH CHINA*

NOVEMBER - MARCH

1. GENERAL. Winters are cloudy, humid, and cool. Mean cloud cover varies from 35 to 90 percent with the greater cloudiness often at higher elevations. Mean daily minimum temperatures range from the teens (Northwest Mountains) to the low 50's (F) in the Szechwan Basin. Mean maximums range from 32F to 67F. Precipitation most often occurs as rain on 8-15 days a month, but some mountain locations such as O-Mei Shan and Sung-p'an have snow on 10-20 days per month. Thunderstorms are infrequent, occurring on 1-3 days a month from February to March. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Generally good except at a few mountain stations where low ceilings are common at all hours. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500 feet/3 miles, 5-20 percent; and less than 500/1, 5-15 percent. Frequencies of all these conditions increase 3-4 times at mountain stations such as O-Mei Shan and Pi-chieh where ceilings are less than 5000 feet up to 80 percent of the time.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-20 days per month.

4. TERMINAL WEATHER. Ch'eng-tu, China. Good. Ceiling/visibility less than 300/1 occurs 30 percent of the time in the morning hours and less than 5 percent at other times.

5. EXPOSURE WEATHER. Days are cool and nights quite cold with many stations reporting subfreezing temperatures. Snow is fairly common at mountain locations.

CH'ENG-TU, CHINA	NOV	DEC	JAN	FEB	MAR
TEMPERATURE (F)					
Absolute Maximum	79	69	70	79	86
Mean Maximum	61	52	50	54	63
Mean Minimum	49	41	38	41	48
Absolute Minimum	32	25	23	25	31
MEAN PRECIPITATION (INCHES)	0.7	0.2	0.3	0.6	1.0
MEAN NUMBER OF DAYS					
Precipitation	9	5	6	8	11
Snowfall	*	*	1	1	0
Thunderstorms	0	0	0	0	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair due to early morning and early evening low ceilings, especially over the mountains. Conditions for paradrops are favorable 30-70 percent of the time.

7. ASTRONOMICAL WEATHER. Ch'eng-tu, China. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	NOV	DEC	JAN	FEB	MAR
First Light	0704	0727	0736	0721	0651
Last Light	1832	1831	1850	1916	1935

* South China lies between 18-34°N and 98-123°E.

(Prepared: 7 October 1981)

APRIL - MAY

1. GENERAL. Spring is warm during the day and cool at night, and humid. Mean cloudiness is 60-90 percent. Temperatures range from a mean daily minimum of 31F to 65F to a mean maximum of 46F to 83F. Rain or rain showers occur up to 15 days a month. Thunderstorms occur 3-8 days per month at nearly all locations. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Usually good except at a few mountain stations where cloud ceilings less than 3000 feet occur up to 70 percent of the time during early morning hours. Ceiling/visibility less than 5000 feet/6 miles occurs 10-60 percent of the time; less than 1500 feet/3 miles, 10-50 percent; and less than 500/1, 10-40 percent in the morning and less than 5 percent at other hours. Turbulence, icing, and thunderstorms become more frequent flight hazards with the onset of spring. The greatest frequencies of ceilings below the above categories are at locations above 5000 feet, especially in the western reaches of the region.

3. RECONNAISSANCE WEATHER. Poor due to extensive cloud cover, especially over the mountains. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 4-12 days per month.

4. TERMINAL WEATHER. Ch'eng-tu, China. Fair due to frequent rain/rain showers (15 days per month) and morning fog (6 days a month). Ceiling/visibility less than 300/1 occurs up to 25 percent of the time in the early morning, but less than 3 percent at other times.

5. EXPOSURE WEATHER. The Szechwan Basin area tends to be warm and humid while mountains sites are often cooler and drier. Rain is frequent and snow occurs 10 days per month at higher elevations.

<u>CH'ENG-TU, CHINA</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	101	100
Mean Maximum	73	81
Mean Minimum	56	63
Absolute Minimum	32	48
<u>MEAN PRECIPITATION (INCHES)</u>	2.2	3.8
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	14	15
Thunderstorms	2	4

6. PARADROP WEATHER. Fair due to early morning low ceilings and frequent rain showers. Conditions are favorable for paradrops 30-60 percent of the time.

7. ASTRONOMICAL DATA. Ch'eng-tu, China. (Data as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0613	0543
Last Light	1956	2017

(Prepared: 2 October 1981)

JUNE - AUGUST

1. GENERAL. Cloudy, hot, and humid conditions are typical of the this are of southern China during the summer. Mean cloud cover varies from 70-85 percent. Mean daily minimum temperatures range from 43F to 77F, and mean maximums from 56F to 94F. Precipitation is frequent, usually occurring as heavy rain showers. Thunderstorms occur 5-10 days per month and are sometimes severe over mountainous terrain. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Generally good at the lower elevations. Mountainous locations, however, frequently have poor conditions during the morning due to low ceilings and during the afternoon due to thunderstorms. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-60 percent of the time; less than 1500 feet/3 miles, 5-40 percent; and less than 500/1, 5-30 percent, with highest percentages at higher elevations. Turbulence, icing, and thunderstorms are frequent flight hazards.

3. RECONNAISSANCE WEATHER. Poor to fair due to cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 3-15 days per month. Evening hours are most favorable for reconnaissance operations.

4. TERMINAL WEATHER. Ch'eng-tu, China. Fair because of frequent rain showers (15-20 days per month) and early morning fog. Ceiling/visibility less than 300/1 occurs 10-20 percent of the time in the early morning hours, but only 1-3 percent at all other times.

5. EXPOSURE WEATHER. Outdoor activities may be limited due to the typically hot, humid, and wet days encountered throughout much of the region.

<u>CH'ENG-TU, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	102	104	102
Mean Maximum	84	88	87
Mean Minimum	69	73	72
Absolute Minimum	56	61	54
<u>MEAN PRECIPITATION (INCHES)</u>	4.8	12.0	11.9
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	16	17	16
Thunderstorms	3	10	9

6. PARADROP WEATHER. Fair. Frequent rain showers make paradrops favorable only 50-70 percent of the time.

7. ASTRONOMICAL DATA. Ch'eng-tu, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0533	0544	0604
Last Light	2035	2035	2012

(Prepared: 14 October 1981)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn is cloudy, warm, and humid. Mean cloud cover varies from 60-90 percent. Mean daily minimum temperatures range from 34F to 69F. Maximums range from 45F to 84F. Precipitation, usually rain, occurs on about 15-20 days per month, but snow occasionally occurs in the higher elevations. Thunderstorms are infrequent, occurring 1-3 days a month. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Good except at several mountain locations where low ceiling/visibility is commonplace during early morning hours. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-50 percent of the time; less than 1500/3, 5-30 percent; and less than 500/1, 5-15 percent. Mountain stations such as Hsin-chou and O-mei Shan, however, are less than 500/1, 30-80 percent of the time.

3. RECONNAISSANCE WEATHER. Poor due to extensive cloud cover especially over the Northwest Mountains. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 3-12 days per month with little diurnal change.

4. TERMINAL WEATHER. Ch'eng-tu, China. Fair due to frequent rain showers and low ceilings. Ceiling/visibility less than 300/1 usually occurs 20-30 percent of the time during early morning hours, but less than 3 percent at other times.

5. EXPOSURE WEATHER. Generally, a very comfortable time of the year despite frequent rain and rain showers.

<u>CH'ENG-TU. CHINA</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)		
Absolute Maximum	94	91
Mean Maximum	79	70
Mean Minimum	66	59
Absolute Minimum	54	42
MEAN PRECIPITATION (INCHES)	5.5	2.1
MEAN NUMBER OF DAYS		
Precipitation	16	16
Thunderstorms	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Frequent rain/rain showers result in fair paradrop conditions. Generally, favorable paradrop conditions occur 40-75 percent of the time.

7. ASTRONOMICAL DATA. Ch'eng-tu, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>
First Light	0623	0641
Last Light	1934	1858

(Prepared: 30 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA SOUTHERN PLAINS AND HILLS OF SOUTH CHINA*

NOVEMBER - MARCH

1. GENERAL. During the winter monsoon the weather is cloudy, cool, and humid. Mean cloud cover varies from 55 to 90 percent with greatest amounts in February and March. Mean daily minimum temperatures range from 44F to 72F. Maximums vary between 52F and 83F. Precipitation usually occurs as rain and is relatively infrequent. Thunderstorms are rare during the early part of the season, but increase in frequency to three per month by March. Gale force winds (28 knots or greater) occur an estimated 15-20 times during the season and are most commonly reported at island and coastal locations.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-50 percent of the time; less than 1500/3, 5-25 percent; and less than 500/1, 5-10 percent. Although cloud cover tends to be greatest over the hills, there are few serious restrictions to flying.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days a month with the least favorable conditions occurring during March. Operations are usually best conducted from late evening to early morning due to extensive cloudiness at other hours.

4. TERMINAL WEATHER. Guangzhou, China. Good. Ceiling/visibility less than 300/1 occurs 5-8 percent of the time with visibility restricted by fog (less than 6 miles) on 5-10 days per month, primarily during the morning.

5. EXPOSURE WEATHER. Generally comfortable due to the mild temperatures and light, infrequent rainfall during much of the season.

<u>GUANGZHOU, CHINA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE(F)					
Absolute Maximum	90	87	89	85	88
Mean Maximum	77	69	65	65	69
Mean Minimum	59	52	49	51	57
Absolute Minimum	34	31	31	32	32
MEAN PRECIPITATION (INCHES)	1.2	0.9	0.9	1.9	4.2
MEAN NUMBER OF DAYS					
Precipitation	5	6	7	11	14
Thunderstorms	*	0	*	1	2

* = less than 0.5 day

6. PARADROP WEATHER. Fair to good. Low clouds during the morning occasionally affect operations along the coast and at island locations. Favorable paradrop conditions exist from 50 to 80 percent of the time.

7. ASTRONOMICAL DATA. Guangzhou, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0602	0621	0632	0622	0559
Last Light	1751	1753	1811	1830	1843

* South China lies between 18-34°N and 98-125°E.

(Prepared: 30 December 1981)

APRIL - MAY

1. GENERAL. Spring is cloudy, humid, and mild. During this short transition season, cloudiness, rain, and thunderstorms occur with increasing frequency. Mean cloud cover varies between 60 and 85 percent. Mean daily minimum temperatures range from 57F to 78F. Mean maximums vary from 64F to 94F. Precipitation usually falls on 10-20 days per month and is frequently quite heavy. Thunderstorms are frequent, occurring up to 10 days a month at many locations. Gale force winds (28 knots or greater) occur less than 5 percent of the time, primarily along the sea coast.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-50 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 5-10 percent. Aircraft icing and turbulence occur in the frequent rain showers and thunderstorms, especially over the hilliest sections of the region.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater normally occurs on 10 days per month. Extensive cloudiness results in mostly poor afternoon conditions for aerial reconnaissance.

4. TERMINAL WEATHER. Guangzhou, China. Good. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. However, fog restricts visibility to less than 1 mile 5-10 days a month, during the morning.

5. EXPOSURE WEATHER. Conditions are comfortable during the evening and morning, but the afternoon is usually hot and muggy with frequent rainshowers.

<u>GUANGZHOU, CHINA</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE(F)		
Absolute Maximum	93	96
Mean Maximum	77	85
Mean Minimum	65	72
Absolute Minimum	46	51
MEAN PRECIPITATION (INCHES)	6.8	10.6
MEAN NUMBER OF DAYS		
Precipitation	15	18
Thunderstorms	4	6

6. PARADROP WEATHER. Good. Favorable paradrop conditions occur 65-85 percent of the time with morning hours being the most favorable.

7. ASTRONOMICAL DATA. Guangzhou, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0529	0506
Last Light	1856	1910

(Prepared: 30 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy, hot, and very humid. Mean cloud cover varies from 65 to 85 percent. Temperatures show little variation throughout the region, ranging from minimums of 72F to 81F while mean maximums vary from 80F to 94F.

Rain showers, which are occasionally quite heavy, occur on an average of 15 days per month. Thunderstorms are frequent (10-20 days a month) at island and coastal stations, but infrequent inland. Gale force winds (28 knots or greater) are infrequent, but occasionally occur in association with typhoons and strong thunderstorms. Typhoons usually affect the coastal sections from Ft Bayard to Foochow about four times each season. Flooding becomes a pervasive problem for some of the low-lying plains.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time; less than 1500/3, 2-10 percent; and less than 500/1, less than 5 percent. Aircraft icing is an occasional hazard.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-20 days a month. The afternoons are generally the least favorable for reconnaissance operations because of clouds and thunderstorms.

4. TERMINAL WEATHER. Guangzhou, China. Good in the mornings. Fair in the afternoon due to thunderstorms. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time.

5. EXPOSURE WEATHER. Both days and evenings are hot and oppressive with heavy rain. Localized flooding can seriously hamper outdoor activities.

<u>GUANGZHOU, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE(F)</u>			
Absolute Maximum	99	101	100
Mean Maximum	88	91	91
Mean Minimum	76	77	77
Absolute Minimum	62	68	69
<u>MEAN PRECIPITATION (INCHES)</u>	10.6	8.1	8.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	19	16	16
Thunderstorms	8	9	8

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 60-90 percent of the time, but the afternoon hours are the least favorable because of frequent rain showers, thunderstorms, and occasional strong winds.

7. ASTRONOMICAL DATA. Guangzhou, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0500	0509	0524
Last Light	1925	1926	1909

(Prepared: 29 December 1981)

SEPTEMBER - OCTOBER

1. GENERAL. During autumn this area exhibits a monsoonal climate with cloudy skies and hot daytime temperatures. Mean cloud cover, however, decreases slightly from summer averages, varying from 45 to 80 percent. Mean daily minimum temperatures are usually between 65F and 75F. Mean maximums range from 74F to 90F. Precipitation occurs as rain showers and decreases in frequency from 15 days in September to about 5 days per month by October. Thunderstorms are rare with most locations reporting only one per month by October. Gale force winds (28 knots or greater) are infrequent and most often occur as a result of thunderstorms and

typhoon-associated weather along or near the coast. The region's typhoon season includes the autumn months during which an average of four typhoons may affect coastal and island locations. These storms bring periods of heavy rain, strong winds, and flooding to some of the coastal sections.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 5-10 percent. These frequencies tend to be higher near Hainan and at stations located in the hills.

3. RECONNAISSANCE WEATHER. Poor to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 2-20 days per month. The best conditions occur between late evening and early morning when cloudiness is at a minimum.

4. TERMINAL WEATHER. Guangzhou, China. Good. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. Fog is an occasional problem, reducing visibility to less than 6 miles about 5 percent of the time in the early morning hours.

5. EXPOSURE WEATHER. Both days and evenings are mild to hot, making this a somewhat uncomfortable season. Some locations experience flooding, limiting some outdoor activities.

<u>CANTON, CHINA</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE(F)</u>		
Absolute Maximum	101	97
Mean Maximum	89	85
Mean Minimum	75	67
Absolute Minimum	57	45
 <u>MEAN PRECIPITATION (INCHES)</u>	 6.5	 3.4
 <u>MEAN NUMBER OF DAYS</u>		
Precipitation	12	16
Thunderstorms	4	1

6. PARADROP WEATHER. Good. Favorable paradrop conditions occur 65-90 percent of the time with the best conditions occurring from late afternoon to early morning.

7. ASTRONOMICAL DATA. Guangzhou, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>
First Light	0535	0546
Last Light	1839	1810

(Prepared: 6 October 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA SOUTHWEST MOUNTAINS AND YUNNAN PLATEAU OF SOUTH CHINA*

NOVEMBER - MARCH

1. GENERAL. Winter is partly cloudy and relatively dry with mild days and cool evenings. Mean cloudiness varies considerably, from 30-50 percent over the western portion of the region to 70-90 percent over the eastern sections. Mean daily minimum temperatures are usually 30-64F. Maximums are 48-89F. Precipitation, usually rain, occurs 2-10 days per month; snow is infrequent, occurring on only 1-3 days a month. Most locations have two thunderstorms per month throughout the winter. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Poor in the morning due to low clouds and fog. Good in the afternoon and early evening. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-40 percent of the time; less than 1500/3, 10-30 percent; and less than 500/1, 5-20 percent. Mountain wave conditions are common during the winter with significant turbulence extending to 20,000 feet, especially over Yunnan Province.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-25 days a month. Afternoon and evening are the best times for reconnaissance.

4. TERMINAL WEATHER. Meng-tzu, China. Good except during the morning when cloud ceilings less than 3000 feet occur up to one-third the time. Ceiling/visibility less than 300/1 occurs less than 10 percent of the time.

5. EXPOSURE WEATHER. Mild temperatures and low humidity make conditions comfortable.

<u>MENG-TZU, CHINA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)					
Absolute Maximum	89	82	84	86	93
Mean Maximum	71	68	68	71	77
Mean Minimum	53	46	46	49	54
Absolute Minimum	34	26	28	32	33
MEAN PRECIPITATION (INCHES)	2.2	0.5	0.3	0.7	1.2
MEAN NUMBER OF DAYS					
Precipitation	7	2	2	5	5
Thunderstorms	0	1	1	2	3

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 60-90 percent of the time. Occasionally, conditions are only fair over mountainous terrain due to early afternoon low ceilings which usually rise later in the day.

7. ASTRONOMICAL DATA. Meng-tzu, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0656	0715	0726	0717	0654
Last Light	1846	1847	1906	1925	1938

* South China lies between 18-43°N and 98-123°E.

(Prepared: 6 October 1981)

APRIL - MAY

1. GENERAL. Spring is a short transition period of increasingly cloudy skies, high humidity, and warm days but cool evenings. Mean cloud cover varies from 35-85 percent with the greatest coverage in May. Mean daily minimum temperatures range from 47-74F and maximums from 69-96F. Precipitation usually occurs as rain or rain showers and is as frequent as 10-20 days per month. Thunderstorms are infrequent in April but occur 10-15 days during May. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 25-50 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 5-10 percent of the time. Mountain waves, primarily a winter phenomena, may still cause moderate to severe turbulence to great heights. By May, embedded thunderstorms become increasingly frequent, especially in the more mountainous regions.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days a month. Best conditions occur in April.

4. TERMINAL WEATHER. Meng-tzu, China. Fair. Cloud ceilings are less than 3000 feet nearly one-third of the time. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time.

5. EXPOSURE WEATHER. Overall, a very comfortable but short season. Rain showers and thunderstorms become more frequent by May, however, and humidity becomes high.

<u>MENG-TZU, CHINA</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)		
Absolute Maximum	97	98
Mean Maximum	82	84
Mean Minimum	60	65
Absolute Minimum	39	50
MEAN PRECIPITATION (INCHES)	1.6	4.5
MEAN NUMBER OF DAYS		
Precipitation	8	12
Thunderstorms	5	5

6. PARADROP WEATHER. Good in April. Fair in May. Conditions are favorable for paratroops 60-90 percent of the time. Afternoon rain showers and thunderstorms affect paratroops by May.

7. ASTRONOMICAL DATA. Meng-tzu, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0623	0601
Last Light	1950	2005

(Prepared: 6 October 1981)

JUNE - AUGUST

1. GENERAL. The summer monsoon brings cloudy skies, hot days, mild nights, and frequent periods of rain showers. Cloud cover varies little, averaging about 85 percent throughout the day. Mean daily minimum temperatures range from 53F to 77F. Maximums range from 71F to 93F. Precipitation usually occurs as rain showers on about 20-25 days per month. Thunderstorm activity peaks during August with 12-18 such days for many locations. Gale force winds (28 knots or greater) are extremely rare, but are possible with thunderstorms.

2. FLYING WEATHER. Fair. Clouds often obscure mountain ridges and peaks, and thunderstorm/rain showers may make circumnavigation necessary during the afternoon. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 60 percent of the time in the morning, but only 20-30 percent during the afternoon; less than 1500/3, 10-25 percent in the morning, 5 percent at other times; and less than 500/1, 10 percent in the morning, less than 2 percent at other times. Low-level turbulence is common over much of this mountainous region.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 2-9 days per month. The best conditions occur during the morning.

4. TERMINAL WEATHER. Meng-tzu, China. Fair. Ceilings less than 3000 feet occur more than half the time. Ceiling/visibility less than 300/1 occur less than 5 percent of the time, primarily in conjunction with afternoon thunderstorms.

5. EXPOSURE WEATHER. Evenings are mild and days frequently hot and humid with numerous rain showers and thunderstorms.

<u>MENG-TZU, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	97	95	98
Mean Maximum	84	83	83
Mean Minimum	67	67	67
Absolute Minimum	55	59	56
<u>MEAN PRECIPITATION (INCHES)</u>	5.4	7.2	8.0
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	15	18	20
Thunderstorms	7	8	11

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops 55-80 percent of the time. Frequent afternoon rain showers and low ceilings over the mountains affect paratroops.

7. ASTRONOMICAL DATA. Meng-tzu, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0555	0604	0619
Last Light	2019	2020	2003

(Prepared: 6 October 1981)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn throughout the area is a period of cloudy skies, warm and humid days, and frequent rain showers. Mean cloud cover is often 65-80 percent at all hours. Mean daily minimum temperature range from 47F to 73F. Maximums range from 62F to 92F. Precipitation is frequent and usually rain. Thunderstorm frequency decreases from six per month in September to about three during October. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Fair. Frequently, low ceilings and/or rain showers obscure mountain ridges and peaks during the early mornings and mid to late afternoons. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-50 percent of the time; less than 1500 feet/3 miles, 35 percent during early morning hours and less than 10 percent at other times; and less than 500/1, 10-30 percent in the morning and less than 5 percent at other times.

3. RECONNAISSANCE WEATHER. Poor due to extensive cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 3-15 days per month.

4. TERMINAL WEATHER. Meng-tzu, China. Fair. Low ceilings (less than 3000 feet) occur about half the time. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time.

5. EXPOSURE WEATHER. Frequent rain and rain showers occasionally detract from the otherwise comfortable days and nights of this region.

<u>MENG-TZU, CHINA</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)		
Absolute Maximum	93	90
Mean Maximum	82	76
Mean Minimum	64	59
Absolute Minimum	50	40
MEAN PRECIPITATION (INCHES)	3.9	2.1
MEAN NUMBER OF DAYS		
Precipitation	12	10
Thunderstorms	2	1

6. PARADROP WEATHER. Fair due to rain and rain showers on 15-20 days per month. Conditions are favorable for paratroops 60-85 percent of the time. Generally, late morning to midday hours are most favorable.

7. ASTRONOMICAL DATA. Meng-tzu, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>
First Light	0630	0640
Last Light	1933	1904

(Prepared: 9 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA NORTHERN HIGHLANDS AND BASIN REGION OF TIBET

DECEMBER - FEBRUARY

1. GENERAL. Winter is characterized by partly cloudy skies, cold days and nights, and scant precipitation. Mean cloud cover increases from 35-65 percent in the morning to 60-85 percent during the afternoon. Mean daily minimum temperatures range from -15F to about zero degrees on the south side of the northern ranges to zero to 20F elsewhere. Maximums range from 15F to 45F. Light rain or snow falls on about 2 days per month, with accumulations typically less than 0.5 inch. Thunderstorms are practically nonexistent. Gale force winds (28 knots or greater) are rare in the valleys, but are quite frequent at higher elevations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 2-5 percent. The western and extreme northern sections of the region have the highest frequencies of low ceilings and visibilities. Turbulence is a flight hazard that is occasionally encountered over most of the region but is probably most intense over the Northern Highlands.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days per month. The best conditions usually occur during the morning as cloud cover usually increases during the afternoon with peak coverage occurring near sunset.

4. TERMINAL WEATHER. Xining, China. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. Visibility less than 6 miles occurs on 5-10 days per month, however, due primarily to early morning fog.

5. EXPOSURE WEATHER. The cold and windy conditions of northern Tibet are not favorable to outdoor activity and appropriate protective measures are required for personnel and equipment.

<u>XINING, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	56	54	66
Mean Maximum	38	36	42
Mean Minimum	10	7	14
Absolute Minimum	-9	-10	-3
<u>MEAN PRECIPITATION (INCHES)</u>	0.1	*	0.1
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	2	2	2
Snowfall	1	1	2

* = less than 0.05 inch

6. PARADROP WEATHER. Fair in valley locations. Poor over much of the region due to high winds and occasional low ceilings. Conditions are favorable for paraproducts 30-60 percent of the time.

7. ASTRONOMICAL DATA. Xining, China. (Date on the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0748	0756	0736
Last Light	1827	1848	1919

(Prepared: 9 December 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy and windy with cool days and cold nights. Mean cloud cover varies from about 60 percent in the morning to 80-90 percent during the afternoon. Mean daily minimum temperatures vary from -5F to 30F in March and increase to 20-55F by May. Maximums range from 30F to 50F in March to mostly in the 60's in May. Rain is the predominate form of precipitation, but snow can occur on 4 days during March. Thunderstorms are rare during March, but 1-3 during May are common for most locations. Gale force winds (28 knots or greater) are infrequent at most locations except at canyons and passes where they are frequent.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 3-8 percent; and less than 500/1, 1-4 percent. These frequencies of occurrence are higher at a few basin locations. Moderate or greater turbulence can be encountered over much of the highlands. Occasionally, dust and sandstorms restrict low-level flight visibility.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days per month. Afternoons are generally poor for reconnaissance operations due to the persistent cloud cover.

4. TERMINAL WEATHER. Xining, China. Good. Ceiling/visibility less than 300/1 occurs 1-3 percent of the time.

5. EXPOSURE WEATHER. Cool days and cold nights coupled with either rain or snow make conditions generally uncomfortable.

<u>XINING, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	77	82	88
Mean Maximum	50	61	69
Mean Minimum	24	34	42
Absolute Minimum	8	12	28
MEAN PRECIPITATION (INCHES)	0.2	0.7	1.3
MEAN NUMBER OF DAYS			
Precipitation	4	4	8
Snowfall	4	1	*
Thunderstorms	0	*	3

* = less than 0.5 day

6. PARADROP WEATHER. Fair to poor. Conditions are favorable for paratroops 30-60 percent of the time. Most valley locations are poor due to strong winds while nearly all locations are subject to increasingly frequent precipitation through the spring.

7. ASTRONOMICAL DATA. Xining, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0659	0614	0538
Last Light	1945	2013	2041

(Prepared: 9 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy with mostly mild days and cool nights. Mean cloud cover varies little from month to month, averaging 55 to 75 percent. Mean daily minimum temperatures are usually in the 40's or 50's (F), but can range from 29F to 66F. Maximums range from 50F to 90F. It's colder at higher elevations. Precipitation often falls as rain or rain showers on 5-15 days each month with meager accumulations. In the extreme eastern part of the Basin Region thunderstorms occur on 8-15 days per month, but are considerably less frequent elsewhere. Gale force winds (28 knots or greater) are rare in the valleys, but occasionally occur in the highlands.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-40 percent of the time; less than 1500/3, 3-10 percent; and less than 500/1, 2-5 percent. Thunderstorms are frequent over the eastern sections of the region, but infrequent elsewhere. Clear icing may be encountered in clouds between 18,000 and 30,000 feet MSL.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days per month. Conditions are normally best from late evening to early morning.

4. TERMINAL WEATHER. Xining, China. Good to fair. Rain showers and afternoon thunderstorms occasionally make conditions marginal for brief periods. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time.

5. EXPOSURE WEATHER. One of the most comfortable times of the year with mild to warm days and cool nights, although rain showers are frequent.

<u>XINING, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	90	90	90
Mean Maximum	73	77	75
Mean Minimum	49	54	54
Absolute Minimum	37	43	42
MEAN PRECIPITATION (INCHES)	1.8	3.6	2.9
MEAN NUMBER OF DAYS			
Precipitation	12	12	12
Thunderstorms	4	5	4

6. PARADROP WEATHER. Good in the valleys. Poor at all locations during the afternoon due to rain showers, thunderstorms, and low ceilings/visibilities. Winds are often an additional constraint, especially in the highlands. Conditions are favorable for paradrops 20-50 percent of the time.

7. ASTRONOMICAL DATA. Xining, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0523	0536	0602
Last Light	2103	2101	2032

(Prepared: 9 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is partly cloudy and cool with a significant decrease in precipitation throughout the season. Cloud cover over much of the region averages between 45 and 85 percent. Mean daily minimum temperatures, usually in the 30's and 40's (F) during September, decrease to zero degrees to 20F by November. Mean maximums range from 50-75F in September to the 30's and 40's in November. Precipitation undergoes a change from frequent rain during September and October to infrequent, light snow flurries by November. Thunderstorms occur on 3-10 days per month during early autumn, but are rare by November. Although gale force winds (28 knots or greater) are seldom reported, they are estimated to occur frequently within mountainous terrain.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs an average of 10-20 percent in the morning, but 30-60 percent of the time in the afternoon; less than 1500/3, 3-10 percent for most locations, but 20-60 percent at Sewu Kou; and less than 500/1, 2-5 percent. Flying weather improves through the period as thunderstorm become much less numerous by October and November. At least moderate turbulence is common over the region's rugged terrain.

3. RECONNAISSANCE WEATHER. Fair. Cloud cover causes deteriorating conditions throughout the afternoon. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days per month. November tends to be the best month of the period.

4. TERMINAL WEATHER. Xining, China. Good. Ceiling/visibility less than 300/1 occurs up to 3 percent of the time. The frequent rain showers in September occasionally cause poor terminal weather conditions for brief periods.

5. EXPOSURE WEATHER. September is typically mild and rainy while October and November are cold and windy.

<u>XINING, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	81	78	69
Mean Maximum	65	58	46
Mean Minimum	46	36	21
Absolute Minimum	32	20	-2
MEAN PRECIPITATION (INCHES)	3.6	1.0	0.2
MEAN NUMBER OF DAYS			
Precipitation	12	8	2
Snowfall	0	2	2
Thunderstorms	3	2	0

6. PARADROP WEATHER. Fair to poor. Conditions are favorable for paradrops 30-60 percent of the time. Frequent strong winds make conditions poor over mountains and near canyons and passes.

7. ASTRONOMICAL DATA. Xining, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0628	0653	0722
Last Light	1948	1904	1832

(Prepared: 9 December 1981)

SITUATION CLIMATIC BRIEF

PEOPLE'S REPUBLIC OF CHINA
SOUTHERN MOUNTAINS REGION OF TIBET

DECEMBER - FEBRUARY

1. GENERAL. Winter is partly cloudy, cold, and humid in the morning, but dry during the afternoon. Mean cloudiness varies from 25 percent in the morning to 50-80 percent during the afternoon. Mean daily minimum temperatures range from -7F in the extreme western part of the region to a mild 54F in the southeast. Maximums are 25-75F. Precipitation usually occurs as rain up to 12 days per month, but snow can occur on 2-4 days a month at several stations. Thunderstorms are extremely rare. Gale force winds (28 knots or greater) are rare. However, in the eastern part of this region, the bora, a cold wind that spills down slopes and through canyons, may occasionally reach speeds of 40 knots across valley locations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time (one station in the extreme east, Ya-an, reports this condition 30-40 percent of the time); less than 1500/3, 2-10 percent; and less than 500/1, less than 3 percent. Clear-air turbulence and mountain-wave turbulence can both be moderate to extreme up to heights of 20,000 feet MSL and are fairly common during the winter, especially along the Great Himalayan Range.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 8-25 days a month. The frequency of favorable days decreases significantly by February, as cloud cover becomes more extensive.

4. TERMINAL WEATHER. Lhasa, China. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time.

5. EXPOSURE WEATHER. Cool and arid days result in semicomfortable conditions for much of the region. Nights typically become very cold, with equivalent chill temperatures dropping to -10F.

<u>LHASA, CHINA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	62	67	71
Mean Maximum	49	46	48
Mean Minimum	18	16	21
Absolute Minimum	5	7	8
MEAN PRECIPITATION (INCHES)	*	*	0.2
MEAN NUMBER OF DAYS			
Precipitation	*	*	1
Snowfall	*	*	*
Thunderstorms	0	0	*

* = less than 0.05 inch or 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 70-90 percent of the time with best conditions from late evening to early morning.

7. ASTRONOMICAL DATA. Lhasa, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0817	0826	0812
Last Light	1925	1944	2009

(Prepared: 9 December 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy with mild to warm days and cool nights. Mean cloud cover varies from 50 percent in the morning to 85 percent by midafternoon. Mean daily minimum temperatures range from the teens at the higher elevations to the 60's (F) in the southeast. Maximums are 45-85F. Precipitation increases significantly, usually occurring as rain and rain showers; however, a few stations can expect 2-7 days of snow through the period. Thunderstorm frequency increases from 1-2 days in March to 6-8 days in May. The wind blows constantly but gale force winds (28 knots or greater) occur less than 1 percent of the time.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time at most stations (30-80 percent in the Himalayans and southeast at Phari Dzong and Ya-an); less than 1500/3, 5-10 percent; and less than 500/1, less than 2 percent. Low-level turbulence may occur frequently during the afternoons and, with the onset of thunderstorms, the associated flight hazards of severe turbulence, icing, and hail should be expected. Mountain-wave turbulence occurs less frequently as summer nears but is still a fairly common phenomenon along the lee side of mountain ridges.

3. RECONNAISSANCE WEATHER. Fair in the evening and morning. Poor in the afternoon due to extensive cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days per month.

4. TERMINAL WEATHER. Lhasa, China. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. Visibility can be restricted for brief periods by rain or fog.

5. EXPOSURE WEATHER. The lower elevations are usually warm and comfortable even though rain may occur on 15 days a month, while the higher elevations remain cool through spring.

<u>LHASA, CHINA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	74	78	81
Mean Maximum	54	62	69
Mean Minimum	29	37	44
Absolute Minimum	15	20	28
MEAN PRECIPITATION (INCHES)	0.5	0.9	4.2
MEAN NUMBER OF DAYS			
Precipitation	2	4	9
Snowfall	2	3	*
Thunderstorms	*	3	6

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paratroops 70-90 percent of the time with best conditions from late evening to early morning.

7. ASTRONOMICAL DATA. Lhasa, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0743	0706	0637
Last Light	2028	2047	2107

(Prepared: 9 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy, warm, and humid with frequent heavy rain. Mean cloudiness is 65-85 percent. Mean daily minimum temperatures range from 35F at the highest elevations in the north to 80F in the southeast, and maximums similarly range from 63F to 103F. Rain is abundant, occurring up to 24 days per month in the eastern parts of the region. Thunderstorms are also quite numerous. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or than 6 miles occurs 5-30 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, less than 2 percent. Afternoon thunderstorms are frequently heavy; the usual hazards of icing, severe turbulence, and hail should be expected with these thunderstorms. A few locations in the Great Himalayan Range have cloud ceilings below 5000 feet nearly 80 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 2-7 days per month.

4. TERMINAL WEATHER. Lhasa, China. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. Conditions may occasionally be poor for brief periods due to afternoon rain showers and thunderstorms.

5. EXPOSURE WEATHER. Aside from the frequent and, sometimes, heavy rain, exposure conditions are good.

<u>LHASA, CHINA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	87	85	84
Mean Maximum	76	75	73
Mean Minimum	51	52	51
Absolute Minimum	41	44	43
MEAN PRECIPITATION (INCHES)	7.7	20.1	14.5
MEAN NUMBER OF DAYS			
Precipitation	12	19	19
Thunderstorms	10	15	11

6. PARADROP WEATHER. Good. Favorable paradrop conditions exist 70-90 percent of the time with conditions best during the morning hours.

7. ASTRONOMICAL DATA. Lhasa, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0628	0638	0658
Last Light	2125	2125	2102

(Prepared: 9 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a season of transition from cloudy skies and warm temperatures during September and October to mostly clear and cool days by November. Mean cloudiness decreases from about 80 percent in September to 30 percent by November. Mean daily minimum temperatures fluctuate between 40F and 77F in September and 20-50F during November. Maximums decrease from 65-85F in September

to 50-70F by November. The typical pattern of precipitation changes from frequent and, occasionally, heavy rain showers during September to infrequent light snow flurries by November. Thunderstorms occur up a maximum of 15 days during September, but only rarely thereafter as much colder and drier air masses frequent the region. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs from 5 percent of the time at extreme northern locations to 50 percent along the Great Himalayan Range and extreme eastern sections; less than 1500/3, 2-7 percent; and less than 500/1, up to 5 percent. As a rule, the season's best flying conditions occur during November, corresponding with a significant decrease in cloudiness and rain shower and thunderstorm activity.

3. RECONNAISSANCE WEATHER. Fair. Cloud cover makes conditions only fair during September and October. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-25 days per month.

4. TERMINAL WEATHER. Lhasa, China. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time.

5. EXPOSURE WEATHER.. The frequent and heavy rains of September detract slightly from the generally comfortable conditions of autumn.

<u>LHASA, CHINA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	81	75	71
Mean Maximum	71	63	56
Mean Minimum	48	37	25
Absolute Minimum	36	24	15
MEAN PRECIPITATION (INCHES)	8.5	1.0	0.4
MEAN NUMBER OF DAYS			
Precipitation	14	4	*
Snowfall	0	1	*
Thunderstorms	7	1	0

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 70-90 percent of the time, but are occasionally unfavorable in September due to shower activity.

7. ASTRONOMICAL DATA. Lhasa, China. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0716	0733	0755
Last Light	2026	1950	1926

SITUATION CLIMATIC BRIEFS

PART E

EUROPE

SITUATION CLIMATIC BRIEFS - PART E

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(Prepared: 31 December 1981)

SITUATION CLIMATIC BRIEF
THE COASTAL REGION OF ALBANIA
DECEMBER - FEBRUARY

1. GENERAL. Winter is predominately cloudy and humid with mild days and cool nights. Mean cloudiness generally ranges from 50 to 75 percent throughout the season with little diurnal variation. The Adriatic Sea moderates the climate in this region. Mean daily minimum temperatures are in the 30's and 40's (F). Maximums are in the 40's and 50's. Even though snow is possible, precipitation usually falls as rain on 10-15 days a month with average monthly accumulations of 5 to 10 inches. Thunderstorm frequency is low with most locations reporting 2-4 such days per month. East and southeast winds prevail with speeds below 17 knots nearly 95 percent of the time. Gale force winds (28 knots or greater) are rare, but the sirocco, a warm humid wind, occasionally reaches gale intensity. Due to the heavy rainfall, flooding sometimes occurs in the low-lying areas.

2. FLYING WEATHER. Generally fair. Fronts bring low ceilings, frequent rain, and an increase in the potential for aircraft icing and turbulence. Compared to mid-latitude weather in the United States, the duration of such conditions in Albania is shorter. Ceilings less than 5000 feet occur 20-40 percent, and visibilities less than 6 miles occur 10-25 percent of the time; less than 1500 feet and/or 3 miles, 5-20 percent; and less than 500/1, 3-10 percent. Morning hours are the least favorable for flying at most locations.

3. RECONNAISSANCE WEATHER. Fair to poor. Extensive cloud cover is the prime cause of unfavorable conditions. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-15 days during December, deteriorating to about 5-10 days during January and February.

4. TERMINAL WEATHER. Tirane, Albania. Fair. Ceilings below 5000 feet occur up to 40 percent of the time and are often accompanied by rain or rain showers. Ceiling/visibility less than 300/1 occurs less than 3 percent of the time, however.

5. EXPOSURE WEATHER. Mild, rainy days make overall conditions tolerable, but not very comfortable. Temperatures drop to near freezing at night, necessitating the use of protective clothing.

<u>TIRANE, ALBANIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	82	70	75
Mean Maximum	56	54	55
Mean Minimum	38	36	37
Absolute Minimum	18	14	16
MEAN PRECIPITATION (INCHES)	5.6	5.2	4.7
MEAN NUMBER OF DAYS			
Precipitation	12	12	10
Snowfall	*	1	*
Thunderstorms	1	2	4
Fog	4	2	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 65-85 percent of the time. Frequent rainfall and occasional ceilings below 1500 feet affect operations.

7. ASTRONOMICAL DATA. Tirane, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0628	0634	0608
Last Light	1644	1706	1742

(Prepared: 31 December 1981)

MARCH - MAY

1. GENERAL. The maritime climate of Albania is cloudy and moderately humid with mild to warm daytime temperatures during the spring. Mean cloud cover varies from 50 to 75 percent with a distinct decrease in amounts by May. Temperatures fluctuate significantly between locations; mean daily minimums range from 30F to 60F and maximums vary between 41F and 77F. It rains at most locations on 5-10 days per month with 2-5 inch monthly accumulations. Thunderstorms frequency is low at most locations with 2-5 per month. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Fair. Cyclones and their associated fronts occasionally traverse the country, bringing low ceilings, rain, and occasional thunderstorms. Aircraft icing and turbulence are frequent hazards throughout the season. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500/3, 3-10 percent; and less than 500/1, less than 5 percent. May's flying weather is much improved over that in March.

3. RECONNAISSANCE WEATHER. Fair. Cloud cover is the greatest restriction to favorable operations. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-15 days per month. March, during the early afternoon, is generally the optimal time for operations.

4. TERMINAL WEATHER. Tirane, Albania. Good to fair. Frequent rain showers and low ceiling/visibility are among the most common restrictions to ideal conditions. Ceiling/visibility less than 300/1 occurs less than 3 percent of the time.

5. EXPOSURE WEATHER. Comfortable during the daytime. However, evening temperatures frequently drop into the low 40's and protective clothing is required.

<u>TIRANE, ALBANIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	81	88	95
Mean Maximum	57	65	73
Mean Minimum	38	46	54
Absolute Minimum	12	28	36
<u>MEAN PRECIPITATION (INCHES)</u>	3.9	3.4	3.9
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	11	11	10
Thunderstorms	2	4	4
Fog	2	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paradrop operations 70-95 percent of the time. Rain is most frequent restriction to paradrops, although it becomes less of a problem by May.

7. ASTRONOMICAL DATA. Tirane, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0526	0434	0351
Last Light	1814	1849	1924

(Prepared: 31 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is mostly clear, hot, and dry. Mean cloud cover varies from 30-40 percent in June to 15-20 percent by August. Normally, early evening is the least cloudy time of the day. Mean daily temperatures tend to be mildest at locations near the coast--minimums are from 50F to 75F and maximums are mostly in the 80's and 90's. Rainfall is infrequent with average accumulations of about 1 inch per month. The frequency of thunderstorms is low with 3 days per month being average at most locations. Gale force winds (28 knots or greater) are extremely rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 2-10 percent of the time; less than 1500/3, less than 3 percent; and less than 500/1, less than 1 percent. Thermal turbulence is a frequent phenomenon and sometimes extends to altitudes of several thousand feet with the greatest intensity during the afternoon.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days in June, but on 20-30 days during the remainder of the season. Conditions are often restricted during June by the extensive cloud cover.

4. TERMINAL WEATHER. Tirane, Albania. Good. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time.

5. EXPOSURE WEATHER. Hot and moderately humid days with mild nights make summer slightly uncomfortable.

<u>TIRANE, ALBANIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	100	108	105
Mean Maximum	82	88	90
Mean Minimum	50	63	63
Absolute Minimum	46	46	48
<u>MEAN PRECIPITATION (INCHES)</u>	2.4	1.1	1.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	6	4	4
Thunderstorms	3	4	3

6. PARADROP WEATHER. Good. Conditions are favorable for paradrop operations 80-95 percent of the time.

7. ASTRONOMICAL DATA. Tirane, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0333	0347	0419
Last Light	1949	1946	1911

(Prepared: 31 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a season of transition during which precipitation increases in both frequency and amount under increasingly cloudy skies, and daytime temperatures decrease from hot to mild. Mean cloudiness increases from about 35 percent in September to 60-80 percent by November. September is quite pleasant with maximums in the low 80's (F) and minimums between 55F and 65F. By November, mean daily minimums range from 39F to 53F and maximums vary between 48F and 80F. Precipitation usually occurs as rain or rain showers on about 5 days during September increasing to 10-12 days in November with accumulations of 3-10 inches. Thunderstorm activity peaks during autumn with 3-5 such days a month. Gale force winds (28 knots or greater) are rare, but November is the most likely month for them. A warm, humid southerly wind known as the sirocco occasionally brings widespread low clouds and rain into the region. This weather affects primarily the mountain slopes that face the coast.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10 percent of the time during September, but 30 percent in November; less than 1500/3, 3-10 percent; and less than 500/1, less than 3 percent. Fronts move through the region with increased regularity, causing periods of low ceiling/visibility, rain, and occasional thunderstorms. Aircraft icing and turbulence are common flight hazards during periods of maximum storm activity and should be anticipated along and behind all fronts.

3. RECONNAISSANCE WEATHER. Fair to poor. Cloudiness is the chief cause of restricted operations. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-25 days in September and October, but only 5-14 days during November.

4. TERMINAL WEATHER. Tirane, Albania. Good to fair. Prolonged periods of low ceilings and rain are common during November. Ceiling/visibility less than 300/1 occurs less than 3 percent of the time, however.

5. EXPOSURE WEATHER. In most respects, autumn is the most pleasant season of the year with temperatures warm in September and mild in November. The high frequency of rain, however, may affect certain outdoor activities.

<u>TIRANE, ALBANIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	104	97	97
Mean Maximum	82	73	63
Mean Minimum	57	50	46
Absolute Minimum	36	32	19
MEAN PRECIPITATION (INCHES)	2.9	6.2	6.0
MEAN NUMBER OF DAYS			
Precipitation	6	11	13
Thunderstorms	3	4	3
Fog	0	1	3

6. PARADROP WEATHER. Good. Conditions are favorable for paradrop operations 75-95 percent of the time. Rain showers impose an occasional restriction on afternoon operations.

7. ASTRONOMICAL DATA. Tirane, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0453	0524	0559
Last Light	1819	1729	1652

(Prepared: 5 January 1982)

SITUATION CLIMATIC BRIEF

THE INTERIOR MOUNTAINS REGION OF ALBANIA

DECEMBER - FEBRUARY

1. GENERAL. Winter is cloudy and wet with cool days and cold nights. Average cloudiness varies from 60 to 85 percent and normally reaches a maximum during the early afternoon. Mean daily temperatures vary from one location to another, but minimums are usually in the 30's (F) and maximums in the 40's and 50's. Precipitation occurs on 10-15 days a month and is more likely to fall as rain than snow. Both thunderstorms and gale force winds (28 knots or greater) are infrequent although the bora, a strong, cold downslope wind, is common in the northern part of the region and is often accompanied by heavy snow or rain.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-45 percent of the time over the western portions of the region, and up to 60-75 percent at mountain stations and in the north; less than 1500/3, 15-45 percent with highest frequency in the southeast; and less than 500/1, 5-15 percent. Migratory storms and associated fronts often cause low ceiling/visibility, precipitation, and aircraft icing. Turbulence can be encountered throughout the region, but is most frequent in the north and can extend to heights of 30,000 feet.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 3-10 days per month. Conditions are best during afternoon and evening hours when cloudiness is least.

4. TERMINAL WEATHER. Korce, Albania. Fair to poor. Frequent precipitation, low ceilings, and restricted visibility adversely affect terminal operations. Ceiling/visibility less than 300/1 occurs 10-30 percent of the time.

5. EXPOSURE WEATHER. Uncomfortable with frequent rain and snow. Chill temperatures may drop to zero, especially during January.

KORCE, ALBANIA	DEC	JAN	FEB
TEMPERATURE (F)			
Absolute Maximum	68	63	66
Mean Maximum	43	40	45
Mean Minimum	31	27	29
Absolute Minimum	-6	-4	0
MEAN PRECIPITATION (INCHES)	3.0	2.7	2.4
MEAN NUMBER OF DAYS			
Precipitation	10	10	8
Snowfall	4	7	4
Thunderstorms	1	*	1
Fog	3	3	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair to poor. Unfavorable conditions occur as a result of strong winds and frequent precipitation. Conditions are likely to be especially poor over southeastern sections of the region due to frequent low ceilings. Paratroop conditions are favorable 35 to 75 percent of the time.

7. ASTRONOMICAL DATA. Korce, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0622	0629	0604
Last Light	1641	1704	1739

(Prepared: 5 January 1982)

MARCH - MAY

1. GENERAL. Spring is a season of change. Temperatures become increasingly mild as cloudiness and the frequency of precipitation decrease slightly. Average cloud cover varies from 50 to 80 percent and peaks during April. Mean daily minimum temperatures range from 30F to 54F and maximums from 43F to 75F. The frequency of precipitation can vary greatly from one location to another, but averages of 5-15 days a month are typical. Except at the highest elevations, rain is the most common type of precipitation with accumulations of 2-5 inches. Thunderstorm activity increases slowly; May, the month with peak activity has 3-5 days. Gale force winds (28 knot or greater) are rare, but windward mountain slopes in the south occasionally experience the sirocco, a warm, humid wind that approaches gale force intensity and may persist for several hours at a time.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time; less than 1500/3, 20-40 percent in the south-east to 5-10 percent in the north; and less than 500/1, less than 5 percent. Aircraft turbulence and icing in migratory storms are occasional hazards and are most severe along the windward slopes of mountain ranges.

3. RECONNAISSANCE WEATHER. Poor to fair. Extensive cloud cover and reduced visibility due to precipitation are responsible for poor reconnaissance conditions. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days per month. As a rule, maximum and minimum cloudiness occurs in the afternoon and evening, respectively.

4. TERMINAL WEATHER. Korce, Albania. Good to fair. Frequent afternoon rain and/or rain showers reduce visibility to less than 3 miles up to 25 percent of the time. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time.

5. EXPOSURE WEATHER. The season's weather gradually becomes comfortable with the approach of May but frequent and sometimes heavy rainfall can hamper outdoor activities.

<u>KORCE, ALBANIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	73	81	91
Mean Maximum	46	57	66
Mean Minimum	30	39	48
Absolute Minimum	5	13	19
<u>MEAN PRECIPITATION (INCHES)</u>	1.8	2.0	2.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	10	10	11
Snowfall	4	1	*
Thunderstorms	*	1	3
Fog	2	1	2

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops 60-85 percent of the time. Occasional gusty winds and frequent precipitation affect paratroops. Late evening to midmorning is the best time for paratroop operations.

7. ASTRONOMICAL DATA. Korce, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0522	0431	0350
Last Light	1810	1844	1917

(Prepared: 5 January 1982)

JUNE - AUGUST

1. GENERAL. Summer is hot and dry with mostly clear skies. Rain showers are frequent during June with average accumulations of 2 inches. Mean cloud cover varies from 40 to 60 percent in June, but decreases to 15-25 percent during August. Mean daily temperatures exhibit a steady increase during the summer with minimums ranging from 53F to 64F and maximums from 70F to 93F. June is normally the month of peak thunderstorm activity with most locations experiencing 3-5 such days a month. Even though gale force winds (28 knots or greater) are infrequent, the sirocco, a warm and humid southerly wind, occasionally reaches gale force strength, affecting primarily the mountain slopes facing the coast.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time in the northern mountains, but 5-15 percent elsewhere; less than 1500/3, up to 5 percent; and less than 500/1, up to 3 percent of the time. Low-level turbulence frequently occurs during the hottest part of the afternoon. Thunderstorms and aircraft icing are seldom a threat to operations.

3. RECONNAISSANCE WEATHER. Fair to poor. Extensive cloudiness, especially over the north, is the chief restriction. Conditions improve from north to south; sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days per month in the north and 10-22 days in the south. Afternoon maximum cloudiness affects reconnaissance operations, especially during June in association with peak thunderstorm and rain shower activity. August offers the best summer weather.

4. TERMINAL WEATHER. Korce, Albania. Good. Ceiling/visibility less than 300/1 occurs 5 percent of the time except during June when afternoon rain showers briefly reduce visibility to less than 1 mile up to 25 percent of the time.

5. EXPOSURE WEATHER. As the season progresses the comfort index decreases. Temperatures become hot by July and August.

<u>KORCE, ALBANIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	95	97	102
Mean Maximum	75	82	84
Mean Minimum	53	57	59
Absolute Minimum	41	45	43
<u>MEAN PRECIPITATION (INCHES)</u>	1.7	0.8	1.0
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	7	4	4
Thunderstorms	3	3	3

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrops 65-95 percent of the time. Low ceiling/visibility associated with June showers reduce the probability of successful afternoon operations. The weather improves considerably by August.

7. ASTRONOMICAL DATA. Korce, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0332	0346	0417
Last Light	1942	1939	1905

(Prepared: 5 January 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. The area experiences partly cloudy skies, mild temperatures during September turning cool in November, and a distinct increase in both the frequency and amount of precipitation throughout the season. Mean cloud cover varies from 60 to 90 percent during early mornings at river valley locations in the north to 35-70 percent in the south. Mean daily minimum temperatures range from 55F in September to 35-45F in November. Maximums are mostly in the 70's in September and the 50's by November. Precipitation normally falls as rain or rain showers on 5-15 days each month and occurs with increasing frequency as the season progresses. Thunderstorm activity, however, decreases except in northeastern Albania where there are 4 days per month with such occurrences. Although gale force winds (28 knots or greater) are infrequent, the sirocco, a warm and humid southerly wind, becomes increasingly frequent with the approach of winter and may approach gale force intensity, affecting primarily the southern mountain slopes facing the coast.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet occur 30-60 percent of the time in the north and 10-30 percent of the time in the southeast. Visibilities less than 6 miles occur 30-70 percent in the south, but only 5-15 percent of the time in the north. Ceiling/visibility less than 1500/3 occurs 10-30 percent; and less than 500/1, 5-15 percent. Migratory storms and fronts, especially over the northern mountain region, produce rain, aircraft icing, and turbulence.

3. RECONNAISSANCE WEATHER. Fair to poor. Favorable weather conditions prevail throughout the region during September but, by October, northern locations experience increased cloud cover and restricted visibility due to early morning fog particularly in the mountain valleys. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days each month.

4. TERMINAL WEATHER. Korce, Albania. Good. Ceiling/visibility less than 300/1 occurs from about 5 percent of the time in September to 15 percent during November and is often accompanied by rain and fog.

5. EXPOSURE WEATHER. A very pleasant and comfortable season until November when days and nights become noticeably cool and rainfall increases.

<u>KORCE, ALBANIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	95	86	72
Mean Maximum	73	62	50
Mean Minimum	51	44	38
Absolute Minimum	36	27	18
MEAN PRECIPITATION (INCHES)	2.0	3.2	3.9
MEAN NUMBER OF DAYS			
Precipitation	6	9	10
Thunderstorms	2	2	2
Snowfall	0	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paradrop operations 70-90 percent of the time. The prime restrictive factors are frequent rain during September and occasional gusty winds during all months. The least favorable conditions are likely to occur in the afternoon.

7. ASTRONOMICAL DATA. Korce, Albania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0449	0520	0554
Last Light	1814	1725	1649

(Prepared: 25 August 1981)

SITUATION CLIMATIC BRIEF

AZORES

DECEMBER - FEBRUARY

1. GENERAL. Winter weather is wet and windy with mild temperatures and cloudy skies. Rain falls on 15-20 days per month and averages 3-6 inches each month. Surface winds are a frequent hazard. Mean maximum temperatures are in the low 60's (F) and mean minimums are in the low to mid 50's. Mean cloudiness is 60-80 percent. Thunderstorms occur infrequently.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 55-65 percent of the time; less than 1500/3, 3-5 percent; and less than 500/1, less than 0.5 percent of the time. Runway crosswinds exceed landing minimums (surface winds greater than 50 knots and/or crosswind component greater than 30 knots for runway 160-340) on an average of 34-43 hours per month. These winds usually last 3-4 hours, but they have lasted as long as 54 hours. Pilots have frequently reported winds at 200-300 feet AGL which exceeded the runway wind speed by as much as 40 knots. These strong winds and low-level wind shear usually occur during periods of low ceilings and visibilities.

3. RECONNAISSANCE WEATHER. Poor. Frequent and persistent cloud cover reduces the chance for aerial reconnaissance. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on an average of only 5 days or less per month.

4. TERMINAL WEATHER. Lajes, Azores. Poor. A combination of strong, gusty surface winds, frequent precipitation, and cloud cover reduce the frequency of good operational weather. Crosswinds exceed landing minimums up to 2 percent of the time. Ceiling/visibility less than 300/1 occurs less than 0.5 percent of the time. The poor weather conditions at Lajes frequently occur at Santa Maria simultaneously, creating a serious problem for aircraft needing to find a suitable landing alternate.

5. EXPOSURE WEATHER. The frequent strong, gusty winds and heavy rain showers make working outdoors difficult.

<u>LAJES, AZORES</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	72	69	69
Mean Maximum	63	61	60
Mean Minimum	55	54	53
Absolute Minimum	42	42	40
MEAN PRECIPITATION (INCHES)	3.8	5.3	4.7
MEAN NUMBER OF DAYS			
Precipitation	17	19	18
Thunderstorms	1	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions favorable for paradrop operations occur 45-55 percent of the time. The early morning hours are normally the most favorable.

7. ASTRONOMICAL DATA. Lajes, Azores. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0629	0636	0613
Last Light	1657	1720	1753

MARCH - MAY

1. GENERAL. The weather is wet, windy, and mild with mostly cloudy skies. Maximum precipitation, usually showers, occurs in March with a 70 percent probability of occurrence. Thunderstorms occur on about 1 day per month. Daily temperatures vary from the mid 50's (F) to mid 60's through the period. Mean cloudiness is 65-80 percent.

2. FLYING WEATHER. Fair to poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-60 percent of the time; less than 1500/3, 4-6 percent; and less than 500/1, about 1 percent of the time. When a frontal system penetrates into the Azores, Lajes and Santa Maria are often below minimums simultaneously. Typical weather associated with these frontal systems consists of strong gusty surface winds, low-level turbulence, low cloud ceilings, and reduced visibility. Runway crosswinds exceed landing minimums an average of 54 hours in March and 16 hours in May. These crosswinds usually last 3-4 hours, but have lasted as long as 38 hours. In addition, pilots have frequently reported winds at 200-300 feet AGL which exceeded the runway wind speed by as much as 40 knots.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 7 days per month or less.

4. TERMINAL WEATHER. Lajes, Azores. Fair to poor. A combination of strong, gusty surface winds, frequent precipitation, and cloud cover frequently hinder operations. Crosswinds exceed landing minimums up to 5 percent of the time. Ceiling/visibility less than 300/1 occurs less than 0.5 percent of the time. Poor terminal weather frequently occurs at Lajes and at Santa Maria simultaneously creating a serious problem in finding a suitable landing alternate.

5. EXPOSURE WEATHER. Strong, gusty winds and heavy showers can make outside activities difficult.

<u>LAJES, AZORES</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	70	74	74
Mean Maximum	61	63	66
Mean Minimum	53	54	57
Absolute Minimum	42	43	47
MEAN PRECIPITATION (INCHES)	6.1	3.1	2.0
MEAN NUMBER OF DAYS			
Precipitation	20	13	12
Thunderstorms	1	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions favorable for paradrop operations occur 40-75 percent of the time. Early morning is generally the best time.

7. ASTRONOMICAL DATA. Lajes, Azores. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0534	0445	0407
Last Light	1821	1852	1923

(Prepared: 9 June 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy and windy with mild temperatures and occasional rain showers. Mean cloudiness is 55-75 percent. Surface winds greater than 28 knots occur up to 10 percent of the time at exposed portions of the islands. Mean maximum temperatures are in the low to mid 70's (F) and mean minimums are in the mid 60's. Precipitation occurs on approximately 35 percent of the days, primarily as rain showers. Thunderstorms are rare.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 35-60 percent of the time; less than 1500/3, 10 percent; and less than 500/1, very rarely. Surface winds are normally strongest during daylight hours. The main restrictions are low cloud cover and gusty surface winds.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on less than 15 days per month.

4. TERMINAL WEATHER. Lajes, Azores. Fair to good. Cloud cover, though persistent through the daylight hours, rarely forms at heights low enough to restrict airdrome operations. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time. Strong and gusty surface winds produce runway crosswinds greater than 25 knots (runway 160-340) on an average of 2 days per month. The average persistence of these crosswinds is 3 hours, but durations as long as 38 hours have occurred.

5. EXPOSURE WEATHER. The weather is cloudy and windy with mild temperatures and occasional heavy rain showers.

<u>LAJES, AZORES</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	80	85	84
Mean Maximum	70	74	76
Mean Minimum	61	64	66
Absolute Minimum	49	53	55
MEAN PRECIPITATION (INCHES)	1.8	1.7	1.8
MEAN NUMBER OF DAYS			
Precipitation	3	2	1
Thunderstorms	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops up to 80 percent of the time.

7. ASTRONOMICAL DATA. Lajes, Azores. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0348	0401	0431
Last Light	1948	1946	1913

(Prepared: 11 June 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn weather is wet and windy with mild temperatures and cloudy skies. Precipitation falls on 10-20 days per month and averages 1-5 inches per month. Surface winds greater than 28 knots occur less than 1 percent of the time. However, due to the mountainous terrain, wind speeds only a few hundred feet above the runway can be 20-40 knots greater than that at the runway surface creating hazardous landing conditions. Mean maximum temperatures are in the 70's (F) with mean minimum temperatures in the 60's. Mean cloudiness is 50-80 percent. Thunderstorms are rare.

2. FLYING WEATHER. Fair to poor. Ceilings/visibility less than 5000 feet and/or 6 miles occurs 40-60 percent of the time; less than 1500/3, 4-5 percent; and less than 500/1, less than 1 percent of the time. The principal hazards to flying are strong winds and turbulence. Strong winds usually come from the southwest or northeast quadrants. Pilot reports indicate that strong flow from the southwest quadrant creates a mountain-wave which is responsible, at least in part, for the extreme wind velocities recorded at Lajes. It is not uncommon for the winds 200 feet above the runway to be 20-40 knots stronger than the winds on the runway. The crosswind problem at Lajes is compounded by the fact that when strong winds occur at Lajes, they also occur at Santa Maria, so that no suitable alternate exists in the Azores during these periods.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Lajes, Azores. Fair to poor. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time, but frequent, strong gusty surface winds and low-level wind shear cause poor conditions.

5. EXPOSURE WEATHER. Strong winds and accompanying heavy rainfall occasionally make working outdoors difficult.

<u>LAJES, AZORES</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	86	79	73
Mean Maximum	75	70	65
Mean Minimum	65	62	58
Absolute Minimum	54	50	45
MEAN PRECIPITATION (INCHES)	3.2	4.6	4.8
MEAN NUMBER OF DAYS			
Precipitation	12	17	16
Thunderstorms	1	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 65-75 percent of the time during this season. Rain and strong, gusty surface winds affect paradrops.

7. ASTRONOMICAL DATA. Lajes, Azores. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0503	0530	0602
Last Light	1824	1737	1704

(Prepared: 25 November 1981)

SITUATION CLIMATIC BRIEF

BELGIUM

DECEMBER - FEBRUARY

1. GENERAL. Winter is cloudy and cool with frequent rain and snow. Mean cloudiness is 65-85 percent. Mean maximum temperatures range from about 40F to 45F along the coast, 35F to 45F in the central lowlands, and 30F to 40F in the highlands. Mean minimum temperatures range from 30F to 40F on the coast, 25F to 35F in the central lowlands, and 20F to 35F in the highlands. Precipitation is usually light but steady and occurs on about 12-20 days per month. Mean monthly precipitation amounts are 2-4 inches. Snow rarely remains on the ground for more than 1 day on the coast, but in the highlands may last from mid-December until late February. Surface winds are strong, averaging 13-20 knots along the coast and 8-15 knots. Elsewhere thunderstorms occur on 1 day per month or less.

2. FLYING WEATHER. Poor. Frequent and persistent cloud cover throughout the winter with maximum cloudiness during the night hours. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 75-85 percent of the time; less than 1500/3, 45-65 percent; and less than 500/1, 10-20 percent of the time. Icing is frequently encountered at flight levels of 2000-10,000 feet. Surface winds are frequently strong resulting in low-level turbulence, especially over coastal areas.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on less than 7 days per month.

4. TERMINAL WEATHER. Brussels, Belgium. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 10-15 percent of the time. Fog is the primary restriction to vision during the winter months. Runway crosswinds (runway 070-250 true) exceed 25 knots 3 percent of the time. Thunderstorms are rare.

5. EXPOSURE WEATHER. Cold temperatures, strong winds, and frequent precipitation make outdoor work difficult.

<u>BRUSSELS, BELGIUM</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	59	59	63
Mean Maximum	42	42	43
Mean Minimum	33	31	31
Absolute Minimum	5	8	0
MEAN PRECIPITATION (INCHES)	3.2	2.6	2.0
MEAN NUMBER OF DAYS			
Precipitation	19	17	15
Snowfall	5	6	6
Thunderstorms	*	*	*
Fog	7	8	7

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrops less than 40 percent of the time. Late evening and early morning hours are the best.

7. ASTRONOMICAL DATA. Brussels, Belgium. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0759	0801	0722
Last Light	1716	1742	1832

(Prepared: 25 November 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy and windy with frequent precipitation. Mean cloudiness ranges from 65 to 75 percent. Mean maximum temperatures range from the upper 40's (F) in March to the mid 60's in May. Mean minimum temperatures are in the low to mid 30's in March to the mid 40's in May. Precipitation occurs on 12-18 days per month with 2-3 inches per month. Thunderstorms occur on 1-2 days per month. Surface winds average 12-18 knots along the coast, 8-13 knots inland. Gale force winds (28 knots or greater) occur about 5 percent of the time along the coast but only 2 percent of the time or less at inland stations.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 50-80 percent of the time; less than 1500/3, 15-45 percent; and less than 500/1, up to 25 percent of the time. Low-level turbulence is a frequent hazard, especially over coastal areas.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Brussels, Belgium. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 10-24 percent of the time during the early morning and up to 10 percent of the time during the afternoon and evening hours. Runway crosswinds (runway 070-250 true) exceed 25 knots about 3 percent of the time.

5. EXPOSURE WEATHER. Wet and windy conditions can make outdoor activities difficult.

<u>BRUSSELS, BELGIUM</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	72	80	93
Mean Maximum	49	56	65
Mean Minimum	35	39	46
Absolute Minimum	14	24	29
MEAN PRECIPITATION (INCHES)	2.4	2.5	2.5
MEAN NUMBER OF DAYS			
Precipitation	16	16	15
Snowfall	5	2	*
Thunderstorms	1	1	2
Fog	5	3	2

* = less than 0.5 day

6. PARADROP WEATHER. Poor during March. Fair in April and May. Conditions are favorable only 30-40 percent of the time during March, but favorable conditions occur 50-65 percent of the time in April and May.

7. ASTRONOMICAL DATA. Brussels, Belgium. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0625	0514	0413
Last Light	1919	2012	2105

(Prepared: 27 November 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy and cool with frequent precipitation. Mean cloudiness is from 65-75 percent. Mean maximum temperatures range from 65F to 75F; mean minimum temperatures from 45F to 60F. Precipitation occurs on 10-16 days per month, with mean monthly amounts ranging from 1.5-4 inches. Showers and thunderstorms normally account for the largest amounts. Thunderstorms occur on 2-5 days per month. Gale force winds (28 knots or greater) occur about 3 percent of the time. Relative humidity is over 80 percent in the early morning and 60 percent or higher in the afternoon.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 45-55 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1, 5-15 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Brussels, Belgium. Poor to fair. Poor during the early morning hours, due to frequent fog and stratus; fair during other hours. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 5-10 percent of the time during the early morning but only 3 percent or less at other hours. Thunderstorms occur on 3-4 days per month.

5. EXPOSURE WEATHER. High humidity, frequent showers and thunderstorms, morning fog and cool temperatures can hinder outdoor activities.

<u>BRUSSELS, BELGIUM</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	88	97	90
Mean Maximum	69	73	73
Mean Minimum	52	56	56
Absolute Minimum	37	43	43
MEAN PRECIPITATION (INCHES)	1.7	3.1	2.7
MEAN NUMBER OF DAYS			
Precipitation	15	17	16
Thunderstorms	3	4	3
Fog	1	2	2

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-80 percent of the time.

7. ASTRONOMICAL DATA. Brussels, Belgium. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0341	0401	0451
Last Light	2144	2134	2041

(Prepared: 27 November 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is cloudy and cool with frequent precipitation. Mean cloudiness is from 65-85 percent. Mean maximum temperatures range from the mid 60's (F) in September to the mid to upper 40's in November. Mean minimum temperatures range from about 50F in September to the 30's in November. Precipitation falls on 12-18 days per month. Mean monthly amounts are 2-4 inches. Gale force winds (28 knots or greater) occur about 5 percent of the time in September and October and 15 percent in November. Thunderstorms occur on up to 3 days per month.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occurs 60-80 percent of the time; less than 1500/3, 30-50 percent; and less than 500/1, up to 20 percent of the time. In addition, strong winds frequently cause low-level turbulence, and thunderstorms occur on up to 3 days per month.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 8 days per month.

4. TERMINAL WEATHER. Brussels, Belgium. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 10-20 percent of the time during the morning and 3-8 percent of the time during afternoon and evening hours. Fog is the primary restriction to visibility in the morning hours. Runway crosswinds on runway 070-250 (true) exceed 25 knots about 1 percent of the time. Thunderstorms occur 1-3 days a month.

5. EXPOSURE WEATHER. The wet, windy weather can make outdoor work difficult.

<u>BRUSSELS, BELGIUM</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	93	75	68
Mean Maximum	67	59	48
Mean Minimum	52	45	40
Absolute Minimum	37	23	23
MEAN PRECIPITATION (INCHES)	2.4	1.7	3.2
MEAN NUMBER OF DAYS			
Precipitation	15	17	17
Snowfall	0	*	2
Thunderstorms	3	1	*
Fog	5	6	8

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable 40-80 percent of the time. The most favorable time is late afternoon to early morning, the least favorable hours are late morning through early afternoon.

7. ASTRONOMICAL DATA. Brussels, Belgium. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0543	0631	0721
Last Light	1931	1824	1732

(Prepared: 15 July 1981)

SITUATION CLIMATIC BRIEF

BULGARIA

DECEMBER - FEBRUARY

1. **GENERAL.** Winter is mostly cloudy and cold with frequent light rain or snow. Mean cloud cover is 55-75 percent. Mean daily minimum temperatures vary from 15F to 35F. Maximum temperatures are 30F to 45F. Light rain or snow occurs on 6-15 days per month. Thunderstorms are rare. Higher elevations can be snow covered the entire season. Although gale force winds (28 knots or greater) rarely occur at elevations below 5000 feet, several mountain sites above 7000 feet have gale force winds on up to 15 days per month.

2. **FLYING WEATHER.** Poor to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-80 percent of the time; less than 1500/3, 5-40 percent; and less than 500/1, 5-20 percent of the time. Poor in the mountains most of the season with peaks and ridges often obscured. The probability of aircraft icing is high and turbulence is likely over most mountainous terrain. Fog is fairly common, occurring on 15-20 days per month at most mountain stations and stations lying in close proximity to open water.

3. **RECONNAISSANCE WEATHER.** Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur less than 10 days per month. Conditions improve slightly between late evening and early morning.

4. **TERMINAL WEATHER.** Sofia, Bulgaria. Good. Ceiling/visibility less than 300/1 occurs as often as 15 percent of the time during the morning hours in January. Fog is common. Precipitation, often snow, occurs on 7-11 days per month.

5. **EXPOSURE WEATHER.** Days and nights are cold. Snow is frequent, occurring on 10-15 days each month.

<u>SOFLA, BULGARIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	69	62	70
Mean Maximum	39	35	41
Mean Minimum	28	22	26
Absolute Minimum	-7	-24	-15
MEAN PRECIPITATION (INCHES)	1.3	1.2	1.1
MEAN NUMBER OF DAYS			
Precipitation	10	10	11
Snowfall	7	10	11
Thunderstorms	*	0	*

* = less than 0.5 day

6. **PARADROP WEATHER.** Fair to good over the lowlands. Poor over mountainous areas. Conditions at Sofia are favorable for paradrops 55-75 percent of the time.

7. **ASTRONOMICAL DATA.** Sofia, Bulgaria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0702	0708	0641
Last Light	1714	1737	1814

(Prepared: 15 July 1981)

MARCH - MAY

1. GENERAL. Spring is mostly cloudy with moderating temperatures and frequent precipitation. Mean cloudiness is 50-70 percent with the greatest cloudiness over the east and southeast regions. Mean daily minimum temperatures increase from about 35F to 50F during the period while mean daily maximums rise from 50F to 75F. Precipitation is frequently snow in March, but turns to rain or rain showers in April and May. Thunderstorms are rare in March but increase significantly by May. Gale force winds (28 knots or greater) are frequent except at higher elevations where they occur about 10 days per month during March and April.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-55 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 1-5 percent of the time. All of these ceiling/visibility categories occur between 30 and 70 percent of the time over higher terrain. Flying weather in the mountains, however, is usually poor due to obscured peaks and ridges. Turbulence is probable during all months with thunderstorm-associated turbulence an additional hazard during April and May. Aircraft icing is probable with the severest icing occurring with showers or thunderstorms in May.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days per month. The most favorable conditions occur during the nighttime hours.

4. TERMINAL WEATHER. Sofia, Bulgaria. Good despite precipitation occurring 10-15 days per month. Ceiling/visibility of less than 300/1 occurs only 1 percent of the time.

5. EXPOSURE WEATHER. Days are mild and nights are cool with below freezing temperatures on about 15 days in March. May is quite comfortable. Precipitation falls on about half of the days, frequently as snow in the early part of the season becoming rain or rain showers later in the season.

<u>SOFIA, BULGARIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	77	86	93
Mean Maximum	51	60	70
Mean Minimum	32	40	49
Absolute Minimum	-4	21	29
MEAN PRECIPITATION (INCHES)	1.6	2.1	3.2
MEAN NUMBER OF DAYS			
Precipitation	10	12	15
Snowfall	9	2	*
Thunderstorms	*	2	8

* = less than 0.5 day

6. PARADROP WEATHER. Fair to good. Usually poor in the mountains as a result of dense cloud cover. Conditions at Sofia are favorable for paradrops 70-85 percent of the time.

7. ASTRONOMICAL DATA. Sofia, Bulgaria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0558	0505	0421
Last Light	1847	1923	1958

(Prepared: 15 July 1981)

JUNE - AUGUST

1. GENERAL. Summer is fair to partly cloudy and warm with frequent afternoon showers and thunderstorms. Mean cloudiness varies between 30 and 50 percent. Mean daily minimum temperatures range from 45F to 60F. Average maximums are mostly in the 80's. Thunderstorms are more numerous over the mountains. Gale force winds (28 knots or greater) are infrequent except at a few isolated mountain stations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, only 1-3 percent of the time. Higher percentages can be expected over mountainous terrain where peaks and ridges are often obscured by clouds. Aircraft icing and turbulence can be caused by afternoon showers and thunderstorms.

3. RECONNAISSANCE WEATHER. Fair to good. Occasionally poor at higher elevations during the afternoon hours due to showers or thunderstorms. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-25 days per month.

4. TERMINAL WEATHER. Sofia, Bulgaria. Good. Thunderstorms can cause the terminal to drop below minimums for brief periods. Runway crosswinds greater than 15 knots (runway 10/28) occur less than 4 percent of the time and mainly during the afternoon hours. Ceiling/visibility less than 300 feet and/or 1 mile occurs only 1 percent of the time.

5. EXPOSURE WEATHER. Days are warm to hot and nights generally mild. Thunderstorms and showers are fairly frequent.

<u>SOFIA, BULGARIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	97	102	102
Mean Maximum	76	81	80
Mean Minimum	54	57	56
Absolute Minimum	30	41	41
MEAN PRECIPITATION (INCHES)	3.4	2.4	1.9
MEAN NUMBER OF DAYS			
Precipitation	13	9	7
Thunderstorms	11	7	5

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 70-90 percent of the time.

7. ASTRONOMICAL DATA. Sofia, Bulgaria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0402	0417	0450
Last Light	2024	2020	1944

(Prepared: 15 July 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumns are partly cloudy and mild. Increasing cloudiness marks the transition to winter as mean cloud cover varies between 35 and 65 percent. Mean daily minimum temperatures range from 35F to 55F. Maximums vary from 50F to 75F. Precipitation usually occurs as rain showers in September and October, but changes to predominantly snow by November, especially at higher elevations. The number of thunderstorms decreases through the period. Gale force winds (28 knots or greater) are rare except at some mountain sites where they can occur 5-10 days per month.

2. FLYING WEATHER. Fair to good except in the mountains where clouds often obscure peaks and ridges. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-60 percent of the time; less than 1500/3, 5-25 percent; and less than 500/1, 10 percent of the time. These percentages are higher over mountainous terrain. By November, the increased frequency of winter storms causes a deterioration of flying weather and aircraft icing becomes a potential flight hazard.

3. RECONNAISSANCE WEATHER. Fair to good in September and October. Poor by November. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-25 days per month through October, but less than 10 days in November.

4. TERMINAL WEATHER. Sofia, Bulgaria. Good. Morning fog restricts visibility about 15 days each month. Thunderstorm activity decreases as autumn progresses. Runway crosswinds greater than 15 knots (runway 10/28) occur only 1 percent of the time during the season. Ceiling/visibility less than 300/1 occurs 10-15 percent of the time, mostly in the morning.

5. EXPOSURE WEATHER. September and October have warm days and cool nights. By November, days are cool and nights are chilly. The frequency of precipitation increases and by November the precipitation is often snow.

<u>SOFIA, BULGARIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	97	93	74
Mean Maximum	72	62	48
Mean Minimum	50	44	33
Absolute Minimum	29	19	-13
MEAN PRECIPITATION (INCHES)	2.1	2.2	1.9
MEAN NUMBER OF DAYS			
Precipitation	8	11	10
Snowfall	*	1	6
Thunderstorms	3	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Generally good. Conditions at Sofia, Bulgaria, are favorable for paradrops 75-90 percent of the time through October; favorable conditions decrease to 60-65 percent in November due to greater cloudiness.

7. ASTRONOMICAL DATA. Sofia, Bulgaria. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0524	0557	0632
Last Light	1852	1800	1722

(Prepared: 13 May 1981)

SITUATION CLIMATIC BRIEF

CZECHOSLOVAKIA

DECEMBER - FEBRUARY

1. GENERAL. Winter is cold, cloudy, and damp with frequent light rain or snow. Mean daily minimum temperatures are in the upper teens and 20's (F). Maximums are in the upper 20's and lower 30's. Mean cloudiness ranges from 60 to 90 percent. Precipitation occurs on about 10 to more than 20 days per month; usually as snow in the highlands and rain or snow elsewhere. Thunderstorms are rare. Gale force winds (28 knots or greater) occur frequently at elevated locations.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 80 percent of the time; less than 1500/3, up to 45 percent; and less than 500/1, up to 25 percent of the time. Aircraft icing and turbulence are common in the dense clouds.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 2-8 days per month.

4. TERMINAL WEATHER. Prague/Ruzyne, Czechoslovakia. Poor to fair. Ceilings and visibilities are usually low and often accompanied by light precipitation. Ceiling/visibility less than 300/1 occurs up to 15 percent of the time.

5. EXPOSURE WEATHER. Conditions are cold, damp, and uncomfortable.

<u>PRAGUE, CZECHOSLOVAKIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	60	56	53
Mean Maximum	36	34	38
Mean Minimum	29	26	28
Absolute Minimum	-6	-7	-17
MEAN PRECIPITATION (INCHES)	0.9	0.9	0.8
MEAN NUMBER OF DAYS			
Precipitation	13	12	12
Snowfall	6	7	7
Thunderstorms	*	0	*

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are suitable for paradrops 25-50 percent of the time.

7. ASTRONOMICAL DATA. Prague, Czechoslovakia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0717	0718	0642
Last Light	1639	1705	1752

(Prepared: 13 May 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy with frequent precipitation and rapidly increasing temperatures. Mean cloudiness ranges from 50 to 75 percent. Precipitation changes from snow or rain mixed with snow in March to rain showers by May. Precipitation occurs on 10-21 days per month, and thunderstorms on up to 7 days, mostly during April and May. Mean daily minimum temperatures increase from the 20's and 30's (F) in March to the upper 40's in May. Maximums increase from the 40's in March to the mid to upper 60's in May.

2. FLYING WEATHER. Poor. Improves some by May. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 70 percent of the time; less than 1500/3, up to 40 percent; and less than 500/1, up to 20 percent of the time. Aircraft icing and turbulence are common in the dense cloudiness.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on less than 10 days per month. Nights during May offer the best opportunity for reconnaissance.

4. TERMINAL WEATHER. Prague/Ruzyne, Czechoslovakia. Poor in March. Fair in April and May. Ceilings and visibilities are low and precipitation is frequent. Thunderstorms increase in May. Ceiling/visibility less than 300/1 occurs up to 15 percent of the time in March, but only 2-5 percent of the time in April and May.

5. EXPOSURE WEATHER. Chilly and damp in March becoming warm and pleasant by May.

<u>PRAGUE, CZECHOSLOVAKIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	71	82	90
Mean Maximum	47	57	67
Mean Minimum	33	41	49
Absolute Minimum	-6	18	30
MEAN PRECIPITATION (INCHES)	1.1	1.5	2.4
MEAN NUMBER OF DAYS			
Precipitation	13	12	13
Snowfall	6	2	*
Thunderstorms	*	2	6

* = less than 0.5 day

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paratroops 40-80 percent of the time.

7. ASTRONOMICAL DATA. Prague, Czechoslovakia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0547	0435	0336
Last Light	1839	1932	2023

(Prepared: 13 May 1981)

JUNE - AUGUST

1. GENERAL. Summer is mostly cloudy and warm with frequent afternoon rain showers and thunderstorms. Mean cloudiness is 45 to 65 percent. Mean daily minimum temperatures are in the 50's (F). Maximums are in the 60's and 70's. Rain showers occur on 10 to more than 20 days per month. Gale force winds (28 knots or greater) are frequent at higher locations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs less than 30 percent of the time; less than 1500/3, up to 20 percent; and less than 500/1, 2-5 percent of the time. These frequencies are greater over higher terrain. Expect icing and turbulence in and near showers and thunderstorms.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days per month at night, and less than 10 days per month during the afternoon. Night is the best time for reconnaissance.

4. TERMINAL WEATHER. Prague/Ruzyne, Czechoslovakia. Fair to good. Afternoon rain showers or thunderstorms can make landing/takeoff conditions hazardous. Ceiling/visibility less than 300/1 occurs 1-5 percent of the time.

5. EXPOSURE WEATHER. Warm days, cool nights, and frequent precipitation.

<u>PRAGUE, CZECHOSLOVAKIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	99	96	95
Mean Maximum	74	77	75
Mean Minimum	56	60	58
Absolute Minimum	25	32	32
MEAN PRECIPITATION (INCHES)	2.8	2.6	2.2
MEAN NUMBER OF DAYS			
Precipitation	14	14	12
Thunderstorms	6	7	5

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrops 50-85 percent of the time.

7. ASTRONOMICAL DATA. Prague, Czechoslovakia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0308	0327	0415
Last Light	2059	2050	1959

(Prepared: 13 May 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in Czechoslovakia is cloudy with frequent precipitation changing from rain showers in September to rain and/or snow by November. Temperatures decrease rapidly. Mean cloudiness increases from 40-70 percent in September to 70-85 percent by November. Precipitation occurs on 8-22 days per month; thunderstorms occur on 1-3 days in September. Mean daily minimum temperatures

are in the 40's and 50's (F) in September and fall to the 30's in November. Maximum temperatures decrease from the 60's and 70's in September to the 40's in November. Gale force winds (28 knots or greater) are infrequent except at some higher locations.

2. FLYING WEATHER. Good in September, poor thereafter. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur up to 85 percent of the time; less than 1500/3, up to 70 percent; and less than 500/1, up to 25 percent of the time. Icing and turbulence are common in the dense clouds.

3. RECONNAISSANCE WEATHER. Fair to poor. Conditions become predominantly poor by November. Sky cover of 2/8 or less and visibility of 3 miles or greater occur up to 19 days per month, primarily at night during September and October; but, less than 10 days per month at other times.

4. TERMINAL WEATHER. Prague/Ruzyne, Czechoslovakia. Fair to good in September becoming poor during October and November due to low ceilings and visibilities. Ceiling/visibility less than 300/1 occurs up to 25 percent of the time by October.

5. EXPOSURE WEATHER. Warm and pleasant in September becoming chilly, rainy, and damp by November.

<u>PRAGUE, CZECHOSLOVAKIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	90	81	67
Mean Maximum	68	56	46
Mean Minimum	53	44	37
Absolute Minimum	23	16	0
MEAN PRECIPITATION (INCHES)	1.6	2.2	1.2
MEAN NUMBER OF DAYS			
Precipitation	11	11	13
Snowfall	0	1	2
Thunderstorms	2	0	0

6. PARADROP WEATHER. Good in September becoming fair to poor by November due to low ceilings and visibilities. Conditions are suitable for paradrops 40-65 percent of the time in October and November.

7. ASTRONOMICAL DATA. Prague, Czechoslovakia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0505	0553	0642
Last Light	1850	1743	1654

(Prepared: 23 November 1981)

SITUATION CLIMATIC BRIEF

DENMARK

DECEMBER - FEBRUARY

1. GENERAL. Winter in Denmark is cloudy and humid with cool temperatures and frequent precipitation. Cloud cover ranges from 60-85 percent monthly. Relative humidity is seldom less than 80 percent. Mean daily maximum temperatures are in the high 30s to low 40s (F) with mean daily minimum temperatures in the mid -20s to mid -30s. Precipitation falls on 13-19 days per month with mean monthly amounts of 1-3 inches. The number of days with snow increases from 3-5 days in December to 5-9 days in February. Surface winds are relatively strong with gale force winds (28 knots or greater) on up to 7 days per month. Thunderstorms occur infrequently during the winter season.

2. FLYING WEATHER. Poor. Cloud cover is extensive and persistent and visibilities are frequently poor in fog. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 60-80 percent of the time; less than 1500/3, 35-55 percent of the time; and less than 500/1, up to 20 percent of the time. Turbulence is usually caused by migratory storms and their associated strong winds. In the well-developed lows, winds are strong and change directions rapidly. This strong wind shear causes a lot of turbulence, especially in the lower levels where surface friction is also a contributing factor.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 8 days per month at most locations.

4. TERMINAL WEATHER. Copenhagen, Denmark. Poor. Fog, low clouds, and frequent strong gusty surface winds hamper flying activities at Copenhagen. Ceiling/visibility less than 300/1 occurs 10-15 percent of the time. Runway crosswinds (runway 040-220) exceed 25 knots about 5 percent of the time.

5. EXPOSURE WEATHER. The high humidity, frequent precipitation, and strong gusty winds can make working outdoors difficult.

COPENHAGEN, DENMARK

	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	53	49	53
Mean Maximum	38	35	36
Mean Minimum	31	28	27
Absolute Minimum	-1	-10	-13
<u>MEAN PRECIPITATION (INCHES)</u>	2.0	1.5	1.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	18	15	13
Snowfall	5	6	6
Thunderstorms	0	0	0
Fog	3	2	4

6. PARADROP WEATHER. Poor. The weather is favorable for paradrops less than 40 percent of the time.

7. ASTRONOMICAL DATA. Copenhagen, Denmark. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0747	0747	0658
Last Light	1624	1654	1753

(Prepared: 24 November 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy and humid with frequent precipitation and mild temperatures. Mean cloudiness is 50-80 percent. Mean relative humidity is over 70 percent at most locations. Precipitation falls on 10-16 days per month, with monthly amounts averaging 1-2 inches. Mean daily maximum temperatures increase from about 40F in March to near 60F in May. Mean minimums are in the low 30's in March, the low 40's during May. Surface winds are relatively strong; winds of gale force (28 knots or greater) occur on 2-5 days per month. Thunderstorms are rare in March, but occur on 1-2 days per month in April and May.

2. FLYING WEATHER. Poor. There is extensive and persistent low cloud, and visibilities are frequently restricted. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-60 percent of the time; less than 1500/3, 20-40 percent of the time; and less than 300/1, up to 15 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover 2/8 or less and visibility 3 miles or greater occurs on less than 8 days per month.

4. TERMINAL WEATHER. Copenhagen, Denmark. Poor. Low clouds and reduced visibilities in fog and/or precipitation hinder operations at Copenhagen. Ceiling/visibility less than 300/1 occurs about 10 percent of the time. Runway crosswinds exceed 25 knots about 5 percent of the time.

5. EXPOSURE WEATHER. The high humidity, frequent precipitation, and frequently strong, gusty surface winds can make working outdoors difficult.

<u>COPENHAGEN, DENMARK</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	62	79	85
Mean Maximum	40	50	61
Mean Minimum	30	36	44
Absolute Minimum	-1	20	26
MEAN PRECIPITATION (INCHES)	1.4	1.5	1.5
MEAN NUMBER OF DAYS			
Precipitation	15	14	12
Snowfall	6	2	*
Thunderstorms	*	1	1
Fog	4	2	1

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrops less than 40 percent of the time.

7. ASTRONOMICAL DATA. Copenhagen, Denmark. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0628	0507	0400
Last Light	1813	1916	2015

(Prepared: 23 November 1981)

JUNE - AUGUST

1. GENERAL. Summer in Denmark is partly cloudy, mild, and humid with frequent showers. Mean cloudiness is 45-75 percent. Mean daily maximum temperatures range from the low 60's (F) to the low 70's. Minimum temperatures range from the high 50's to the mid 40's. Rain occurs on ten or more days each month, with mean monthly amounts of 1.5-3.5 inches. Surface winds are relatively strong; gale force winds (28 knots or greater) occur on 1-3 days per month. Thunderstorms occur on 1-3 days per month.

2. FLYING WEATHER. Poor. Flying activities are hindered by frequent and persistent cloud cover, reduced visibility (in precipitation or morning fog), and strong gusty surface winds. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-40 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 3 percent of the time or less. Gale force winds (28 knots or greater) occur on 1-3 days per month.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Copenhagen, Denmark. Fair. Cloud cover and visibilities are usually adequate for flying activities. Ceiling/visibility less than 300/1 occurs about 3 percent of the time during the morning hours. Runway crosswinds exceed 25 knots about 4 percent of the time, mostly during the afternoon.

5. EXPOSURE WEATHER. The frequently strong surface winds and frequent precipitation can make working outdoors somewhat difficult. Showers and strong winds occur most frequently during the afternoon hours.

<u>COPENHAGEN, DENMARK</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	90	91	89
Mean Maximum	69	72	69
Mean Minimum	51	54	53
Absolute Minimum	31	39	33
MEAN PRECIPITATION (INCHES)	1.9	2.3	2.8
MEAN NUMBER OF DAYS			
Precipitation	12	14	17
Thunderstorms	2	3	3
Fog	1	1	1

6. PARADROP WEATHER. Poor during the afternoon. Fair at other times. Conditions are favorable 40-70 percent of the time during the evening and morning hours. Conditions are favorable only 30-45 percent of the time during the afternoon due to frequent shower activity.

7. ASTRONOMICAL DATA. Copenhagen, Denmark. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0225	0251	0358
Last Light	2158	2141	2031

(Prepared: 24 November 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in Denmark is cloudy, cool, and humid with frequent precipitation. Mean cloudiness is 60-85 percent. Mean daily maximum temperatures are in the 60's (F) during September, but reach only the mid 40's during November. Mean daily minimum temperatures are about 50F in September, the high 30's in November. Mean relative humidity is over 75 percent. Precipitation falls on 12 or more days per month, with mean monthly amounts of 2-3 inches. Gale force winds (28 knots or greater) are reported on up to 5 days per month. Thunderstorms occur on 1 day per month or less.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-70 percent of the time; less than 1500/3, 20-40 percent of the time, and less than 500/1, up to 10 percent of the time. Turbulence and wind shear are potential hazards due to frequent strong winds.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Copenhagen, Denmark. Fair. Low clouds and visibilities, frequent precipitation, and strong gusty winds hamper flying activities at Copenhagen. Ceiling/visibility less than 300/1 occurs 5-10 percent of the time. Runway crosswinds exceed 25 knots 3-5 percent of the time.

5. EXPOSURE WEATHER. The persistently high humidity, frequent precipitation, and strong gusty surface winds can make working outdoors difficult.

<u>COPENHAGEN, DENMARK</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	86	74	57
Mean Maximum	63	53	43
Mean Minimum	48	42	35
Absolute Minimum	26	19	5
MEAN PRECIPITATION (INCHES)	2.0	1.9	1.8
MEAN NUMBER OF DAYS			
Precipitation	14	16	16
Snowfall	*	1	2
Thunderstorms	1	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrops less than 40 percent of the time. The afternoon hours are the least favorable.

7. ASTRONOMICAL DATA. Copenhagen, Denmark. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0504	0603	0703
Last Light	1907	1749	1647

(Prepared: 7 June 1979)

SITUATION CLIMATIC BRIEF

ENGLAND

DECEMBER - MARCH

1. GENERAL. Winters are cold, cloudy, and stormy. Precipitation, though usually light, is frequent, occurring 15-25 days per month. Monthly amounts range from a little more than 1 inch in southeastern England to 4-6 inches in southwestern and northern England. Most locations average 1-3 days per month with snow cover, though some locations in the north average 3-5 days. Morning minimum temperatures are usually in the mid to upper 30's (F). Occasional midwinter cold snaps can plunge temperatures into the teens or lower. The diurnal temperature range is not large. Afternoon maximum temperatures reach only the low to mid 40's. Gale force winds are common all over England but are especially frequent on the southern and southwestern coasts where they occur from 4-6 days per month. Thunderstorms are rare, but those accompanying cold or occluded fronts can be severe.

2. FLYING WEATHER. Generally poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 60-70 percent of the time; less than 1500/3, 25-35 percent; and less than 500/1, 5-10 percent. Icing and turbulence are frequent occurrences in the winter storms that sweep across England every 2 or 3 days.

3. RECONNAISSANCE WEATHER. Very poor due to cloud cover. Suitable conditions occur only 15-20 percent of the time.

4. TERMINAL WEATHER. Mildenhall RAF, UK. Usually poor. Low ceilings and visibilities, rain or snow, and strong winds are frequent occurrences. Ceiling/visibility less than 300/1 occurs 3-8 percent of the time.

5. EXPOSURE WEATHER. Cold, cloudy, wet, and windy. There are occasional clear periods, but the temperature is usually well below freezing when this occurs.

<u>MILDENHALL RAF, UK</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)				
Absolute Maximum	60	59	62	77
Mean Maximum	45	43	45	50
Mean Minimum	36	34	34	36
Absolute Minimum	9	5	11	17
MEAN PRECIPITATION (INCHES)	1.8	1.8	1.4	1.4
MEAN NUMBER OF DAYS				
Precipitation	20	19	16	17
Snowfall	3	6	6	4
Thunderstorms	*	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Unfavorable 50-70 percent of the time due to low ceilings, precipitation, and winds. There is a slight tendency for the poorest conditions to occur during the early afternoon. The least unfavorable conditions occur around midnight.

7. ASTRONOMICAL DATA. Mildenhall RAF, UK. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0720	0721	0640	0540
Last Light	1627	1654	1746	1836

(Prepared: 7 June 1979)

APRIL - MAY

1. GENERAL. Spring in England is characterized by gradual warming, an increase in height of cloud bases, and a reduction in precipitation frequency. Morning minimum temperatures are in the upper 30's to low 40's (F) in April increasing to the mid 40's in May. Afternoon maximum temperatures range from the low 50's in April to the upper 50's and low 60's in May. Precipitation occurs on 11-16 days per month, and is predominately showery in character. Locations in northern England still have 1-2 days of snowfall during April. Thunderstorms increase with an average of 1 in April and 1-2 in May. The southern and western coasts of England have 1-2 days per month with gale force winds, but they are less common over the rest of the country.

2. FLYING WEATHER. Fair to good in April improving to generally good in May. Ceiling/visibility is less than 5000 feet/6 miles 50-55 percent of the time; less than 1500/3, 15 percent; and less than 500/1, 3-5 percent. Icing and turbulence associated with showers and thunderstorms are a hazard.

3. RECONNAISSANCE WEATHER. Generally poor. Conditions are unfavorable 75-85 percent of the time. The hours from 2100-0200 local time during April are the best for aerial reconnaissance, i.e., conditions can be favorable as much as 40 percent of the time.

4. TERMINAL WEATHER. Mildenhall RAF, UK. Fair to good. Ceilings are above 1500 feet about 85 percent of the time. During the afternoon in April winds greater than 16 knots occur 10-15 percent of the time. Ceiling/visibility less than 300/1 occurs about 2-4 percent of the time during the morning hours.

5. EXPOSURE WEATHER. Partly to mostly cloudy and cool generally with afternoon showers or an occasional thunderstorm. Some days in April can be chilly and windy. Mild days become more frequent in May.

MILDENHALL RAF, UK	APR	MAY
TEMPERATURE (F)		
Absolute Maximum	75	83
Mean Maximum	55	62
Mean Minimum	40	45
Absolute Minimum	24	30
MEAN PRECIPITATION (INCHES)	1.4	1.8
MEAN NUMBER OF DAYS		
Precipitation	18	18
Snowfall	*	*
Thunderstorms	1	3

* = less than 0.5 day

6. PARADROP WEATHER. Quite poor during April, especially during the early afternoon, due to precipitation and strong winds. Conditions are unfavorable 40-70 percent of the time. In May the weather is better because of fewer strong winds; conditions are unfavorable 30-60 percent of the time.

7. ASTRONOMICAL DATA. Mildenhall RAF, UK. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	APR	MAY
First Light	0426	0320
Last Light	1931	2028

(Prepared: 6 June 1979)

JUNE - AUGUST

1. **GENERAL.** Summer in England is characterized in partly cloudy to mostly cloudy skies, frequent rain showers and an occasional thunderstorm. Temperatures are mild along coastal regions, but can become uncomfortably warm in the interior lowlands. Morning minimum temperatures range from the upper 40's to the mid 50's (F). Afternoon maximum temperatures are usually in the upper 60's and lower 70's, but can rise to the upper 80's or even lower 90's at times. Precipitation occurs on 10-19 days per month with westward-facing mountain slopes receiving the most. Thunderstorms occur on 1-3 days per month. Heavy rain, hail, and even tornadoes occasionally occur during periods of thunderstorm activity.

2. **FLYING WEATHER.** Usually fair to good. Ceiling/visibility less than 5000 feet/6 miles occurs 40-50 percent of the time; less than 1500/3, 10-20 percent; and less than 500/1, 2-5 percent. During stagnant weather conditions visibilities in industrial areas can be restricted due to accumulations of smoke and other pollutants. Icing and turbulence are usually not a problem except near showers and thunderstorms.

3. **RECONNAISSANCE WEATHER.** Generally poor, due primarily to cloud cover, although low visibilities in industrial areas can contribute to poor conditions at times. Conditions are favorable 20-25 percent of the time. The best time period is usually 2100-0200 local.

4. **TERMINAL WEATHER.** Mildenhall RAF, UK. Generally good. Cloudy conditions predominate, but ceilings are generally not low. Ceiling/visibility less than 300/1 occurs 5-10 percent of the time around sunrise, due primarily to fog. Showers and thunderstorms usually occur from 1200-1700 local time.

5. **EXPOSURE WEATHER.** Cloudy to partly cloudy with predominantly afternoon precipitation. Temperatures are cool during the morning becoming mild to warm during the afternoon.

MILDENHALL RAF, UK	JUN	JUL	AUG
TEMPERATURE (F)			
Absolute Maximum	95	93	93
Mean Maximum	68	70	70
Mean Minimum	50	54	53
Absolute Minimum	31	40	41
MEAN PRECIPITATION (INCHES)	2.0	2.1	2.0
NUMBER OF DAYS			
Precipitation	15	17	17
Snowfall	*	0	0
Thunderstorms	3	3	3

* = less than 0.5 day

6. **PARADROP WEATHER.** Unfavorable due to fog about 45-55 percent of the time during the morning hours and about 30-40 percent during the afternoon hours due to precipitation. At other times the weather is generally favorable.

7. **ASTRONOMICAL DATA.** Mildenhall RAF, UK. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	JUN	JUL	AUG
First Light	0246	0307	0401
Last Light	2110	2100	2004

Prepared: 7 June 1979)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in England is characterized by deteriorating weather conditions; lowering ceilings and visibilities, more days with precipitation, increasing wind speeds, and decreasing temperatures. Morning minimum temperatures range from 50 to 55 degrees in September and drop to 40-45 degrees in November. Afternoon maximum temperatures decrease from the lower 60's (F) in September to the upper 40's in November. Precipitation occurs on 11-21 days per month, with the greater frequencies occurring in November. In addition, it changes character from the showery precipitation of summer to the slow, steady precipitation of winter. Thunderstorm frequency decreases from about 1 per month in September to near zero in November. Thunderstorms occurring in conjunction with a cold or occluded front can, nevertheless, be quite severe. Hail and even tornadoes are not unknown. Gale force winds occur 1-2 days per month; they are more frequent in southwestern England.

2. FLYING WEATHER. Fair to good in September to generally poor by the end of autumn. Ceiling/visibility less than 5000 feet/6 miles occurs 55-60 percent of the time; less than 1500/3, 20-25 percent; and less than 500/1, 5-7 percent. Aircraft icing is a frequent occurrence in the stratified cloudiness accompanying the migratory lows and fronts that traverse the area. Embedded thunderstorms with their associated icing and turbulence also present a hazard to aircraft operations.

3. RECONNAISSANCE WEATHER. Usually poor at best. Conditions are occasionally favorable at night during September, but as autumn progresses, persistent and extensive cloud cover and low visibilities permit few opportunities for aerial reconnaissance.

4. TERMINAL WEATHER. Mildenhall RAF, UK. Fair to good in September, but becomes progressively poorer during October and November. Increasingly cloudy, windy, and rainy conditions are the norm during autumn. Ceiling/visibility less than 300/1 can be expected to occur 4-6 percent of the time.

5. EXPOSURE WEATHER. Usually cloudy, chilly, and windy, with frequent light precipitation during the autumn. September usually has a few mild, pleasant days, but these become rapidly fewer as autumn progresses.

<u>MILDENHALL RAF, UK</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	87	78	67
Mean Maximum	65	59	49
Mean Minimum	49	45	38
Absolute Minimum	28	26	20
MEAN PRECIPITATION (INCHES)	2.0	1.9	2.3
MEAN NUMBER OF DAYS			
Precipitation	15	16	20
Snowfall	0	*	1
Thunderstorms	1	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Unfavorable 40-60 percent of the time during the late morning and early afternoon due primarily to winds and precipitation. September has more favorable days than October or November. Early evening is the most favorable time of day.

7. ASTRONOMICAL DATA. Mildenhall RAF, UK. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

First Light
Last Light

SEP

0457
1849

OCT

0548
1739

NOV

0641
1645

(Prepared: 3 November 1981)

SITUATION CLIMATIC BRIEF

FINLAND

DECEMBER - FEBRUARY

1. GENERAL. Winter in Finland is cold and cloudy with frequent snowfall. Mean daily maximum temperatures range from the low teens (F) in the north to the low 30's in the south. Mean daily minimums vary from a few degrees above or below zero in the north to the 20's in parts of the south. Cloudiness is extensive, averaging 70-90 percent. Relative humidity is high, with mean values of about 85-95 percent. Snow is the predominant type of precipitation in winter, and much of the area has a continuous snow cover from mid-November through mid-April. Precipitation is reported on 9-20 days per month, with mean monthly amounts of 2 inches or less. Thunderstorms and gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-80 percent of the time; 1500/3, 30-55 percent; and 500/1, up to 25 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month. The afternoon hours are the least favorable.

4. TERMINAL WEATHER. Helsinki, Finland. Poor. The weather at Helsinki is cold and cloudy with frequent snowfall. Ceiling/visibility less than 300/1 occurs 15-25 percent of the time.

5. EXPOSURE WEATHER. During unusually cold winters, temperatures may drop to about -60F in the north and -40F in the south. The cold temperatures, high humidity, and frequent snowfall are hard on both personnel and equipment. Most of Finland has a continuous snow cover from mid-November through mid-April.

<u>HELSINKI, FINLAND</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	47	47	49
Mean Maximum	35	27	26
Mean Minimum	21	17	14
Absolute Minimum	-18	-27	-21
MEAN PRECIPITATION (INCHES)	2.0	1.7	1.5
MEAN NUMBER OF DAYS			
Precipitation	18	18	15
Snowfall	15	17	16
Thunderstorms	0	0	0
Fog	4	6	7

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paratroops less than 40 percent of the time. Afternoon is the worst time.

7. ASTRONOMICAL DATA. Helsinki, Finland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0821	0817	0717
Last Light	1609	1642	1753

(Prepared: 3 November 1981)

MARCH - MAY

1. GENERAL. Spring in Finland is cloudy and cool with frequent precipitation. Mean cloudiness is 50-75 percent. Mean daily maximum temperatures increase from 25F to 35F in March to 45F to 60F during May. Mean daily minimum temperatures are zero to 20F in March, 30F to 40F in May. Thunderstorms and gale force winds (28 knots or greater) are rare.
2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time; 1500/3, up to 40 percent of the time; and 500/1, up to 20 percent of the time.
3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month in most areas.
4. TERMINAL WEATHER. Helsinki, Finland. Poor. Low ceilings and visibilities hamper flying operations throughout the season. Ceiling/visibility less than 300/1 occurs 10-15 percent of the time.
5. EXPOSURE WEATHER. Temperatures in most areas are below freezing during March and the first half of April, so that most areas remain snow-covered until mid-April. Humidity is persistently high, with mean values at most locations are 70-90 percent.

<u>HELSINKI, FINLAND</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	54	67	78
Mean Maximum	30	41	54
Mean Minimum	19	30	40
Absolute Minimum	-12	3	23
<u>MEAN PRECIPITATION (INCHES)</u>	1.4	1.4	1.8
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	14	12	13
Snowfall	13	7	2
Thunderstorms	0	*	2
Fog	7	8	4

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable 45-75 percent of the time. Afternoon is the worst time.

7. ASTRONOMICAL DATA. Helsinki, Finland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0557	0418	0237
Last Light	1903	2025	2158

(Prepared: 12 November 1981)

JUNE - AUGUST

1. GENERAL. Summer in Finland is cloudy and humid with mild temperatures and frequent precipitation. Mean cloudiness is 50-75 percent. Mean relative

humidity is 70-90 percent. Mean daily maximum temperatures are in the 60's (F) and low 70's. Mean daily minimums are in the 40's and 50's. Precipitation occurs on 10-18 days per month, with monthly amounts of 1-3 inches. Thunderstorms occur on 5 days per month or less. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 25-60 percent of the time; less than 1500/3, up to 40 percent of the time; and less than 500/1, up to 20 percent of the time. Moderate or greater turbulence occurs in the vicinity of thunderstorms.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Helsinki, Finland. Low ceilings and visibilities hamper flying activities throughout the season. Ceiling/visibility less than 300/1 occurs 6-12 percent of the time.

5. EXPOSURE WEATHER. Because of the persistently high humidity, equipment and supplies need to be protected from rust, corrosion, and mildew.

<u>HELSINKI, FINLAND</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	88	89	84
Mean Maximum	64	67	65
Mean Minimum	50	55	53
Absolute Minimum	33	42	39
MEAN PRECIPITATION (INCHES)	1.8	2.2	2.9
MEAN NUMBER OF DAYS			
Precipitation	12	14	17
Thunderstorms	2	3	2
Fog	3	2	2

6. PARADROP WEATHER. Fair. Favorable conditions occur on 15-22 days per month. Afternoon is the worst time. The most frequent causes of unfavorable weather are ceilings less than 1500 feet and precipitation.

7. ASTRONOMICAL DATA. Helsinki, Finland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0101	0156	0338
Last Light	2342	2252	2108

(Prepared: 12 November 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in Finland is cloudy and cool with frequent precipitation. Mean cloudiness is 70-90 percent. Mean relative humidity is 85-95 percent. Mean daily maximum temperatures are in the 50's (F) during September, but by November reach only the 20's and 30's. Mean daily minimum temperatures are in the 30's and 40's during September, the teens and 20's during November. Precipitation falls on 14-18 days per month. Mean monthly totals are less than 3 inches. Mean relative humidity is 85-95 percent. Thunderstorms and gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-80 percent of the time; less than 1500/3, 25-60 percent of the time; and less than 500/1, up to 20 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Helsinki, Finland. Poor. Ceilings and visibilities at Helsinki are frequently low, and precipitation occurs often. Ceiling/visibility less than 300/1 occurs up to 20 percent of the time.

5. EXPOSURE WEATHER. The persistently high humidity can cause rust, corrosion, and mildew unless adequate precautionary measures are taken.

<u>HELSINKI, FINLAND</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	77	63	51
Mean Maximum	56	46	36
Mean Minimum	45	38	29
Absolute Minimum	25	14	-4
MEAN PRECIPITATION (INCHES)	2.5	2.6	2.5
MEAN NUMBER OF DAYS			
Precipitation	17	18	18
Snowfall	*	4	10
Thunderstorms	1	*	0
Fog	3	5	3

* = less than 0.5 day

6. PARADROP WEATHER. Generally poor. The frequency of favorable weather ranges from a high of nearly 65 percent during late evening hours in September to a low of 30-35 percent during November afternoons.

7. ASTRONOMICAL DATA. Helsinki, Finland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0503	0616	0729
Last Light	1926	1755	1639

(Prepared: 29 December 1981)

SITUATION CLIMATIC BRIEF

FRANCE

DECEMBER - FEBRUARY

1. GENERAL. Winter is cold and cloudy with frequent light precipitation. Mean cloudiness ranges from 50-75 percent. Mean maximum temperatures are from 40F to 55F, mean minimums from 20F to 40F. Precipitation occurs on 10-20 days per month, with mean monthly amounts of 2-4 inches at most locations, although the western slopes of the Jura mountains and the Pyrenees report up to 8 inches per month. Thunderstorms are rare. Gale force winds (28 knots or greater) occur on up to 7 days per month. One type of wind, called the mistral, frequently affects the Mediterranean coast and lower Rhone valley. Surface wind speeds as high as 60 mph, with gusts to 80 mph, and lasting from a few hours to 10-12 days have been associated with this wind.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occurs 60-80 percent of the time; less than 1500/3, up to 60 percent; and less than 500/1, up to 30 percent. Surface winds are frequently strong, especially along the Mediterranean coast where a strong cold northerly wind (the mistral) often occurs. The airflow in a mistral is 6500-10,000 feet deep, and the wind speed diminishes with height above the ground. Aloft speeds are often 60 mph or greater.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on 5-10 days per month.

4. TERMINAL WEATHER. Paris, France. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 10-30 percent of the time. Poorest conditions frequently occur between 0500 and 1200 local standard time.

5. EXPOSURE WEATHER. Snow depths may frequently limit ground operations at higher elevations. Avalanches occur in the mountains during periods of thaw. Surface winds are often strong, especially along the Mediterranean coast and lower Rhone Valley. Winds have been observed as high as 60 mph gusting to 80 mph. All areas are cold and damp during this season, with low chill temperatures.

<u>PARIS, FRANCE</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	64	60	69
Mean Maximum	44	43	46
Mean Minimum	35	33	33
Absolute Minimum	-14	-2	+4
MEAN PRECIPITATION (INCHES)	2.3	1.3	1.5
MEAN NUMBER OF DAYS			
Precipitation	17	17	14
Snowfall	2	4	3
Thunderstorms	0	*	0

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrops on less than 10 days per month.

7. ASTRONOMICAL DATA. Paris, France. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0659	0703	0627
Last Light	1631	1657	1743

(Prepared: 29 December 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy and mild with frequent light precipitation. Mean cloudiness is 60-80 percent. Mean daily maximum temperatures increase from the 50's (F) in March to the 60's and low 70's in May. Likewise, mean minimums increase from the mid 30's to near 50F. Precipitation falls on 10-20 days per month, with mean monthly amounts of 1.7-4.5 inches. Gale force winds (28 knots or greater) and thunderstorms occur infrequently.

2. FLYING WEATHER. Poor. Fog and low clouds are common during the morning hours, but conditions usually improve a few hours after sunrise. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 45-75 percent of the time; less than 1500/3, 35-60 percent between 0600-0800 LST, 20 percent or less at other hours; less than 500/1, up to 25 percent at 06-08 LST, 3 percent or less at other hours.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Paris, France. Poor during morning, fair at other hours. Conditions less than 300/1 occur 10-20 percent of the time between 0600-0800 LST, 5 percent of the time or less at other hours.

5. EXPOSURE WEATHER. Outdoor activities can be hindered by frequent precipitation. Visibility is frequently poor during the morning hours.

<u>PARIS, FRANCE</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	79	85	92
Mean Maximum	52	59	67
Mean Minimum	36	40	47
Absolute Minimum	10	24	29
MEAN PRECIPITATION (INCHES)	1.8	1.9	2.1
MEAN NUMBER OF DAYS			
Precipitation	13	14	14
Thunderstorms	1	1	3

6. PARADROP WEATHER. Poor. Conditions are favorable less than 50 percent of the time at most locations, due to frequent low cloud and visibility. The morning hours are least favorable, evening hours are best.

7. ASTRONOMICAL DATA. Paris, France. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0534	0428	0332
Last Light	1826	1914	2002

(Prepared: 29 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is partly to mostly cloudy and warm with frequent light rain. Mean cloudiness is 50-70 percent. Mean daily maximum temperatures range from 65F along the north coast to 85F in the southern interior. Mean minimums range from 50F to 65F. Precipitation falls on 10-15 days per month; monthly amounts are 1-3.5 inches. An exception is the Mediterranean coast, where less than 2 inches of rain falls on 6 days or less each month. Thunderstorms occur on 3-5 days each month. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 20-50 percent of the time; less than 1500/3 up to 30 percent; and less than 500/1, up to 15 percent. Thunderstorms occur on 3-5 days each month. Fog occurs frequently during the early morning hours, but usually clears soon after sunrise.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month. An exception is the Mediterranean Coast, which has 10-20 days of favorable weather each month.

4. TERMINAL WEATHER. Paris, France. Fair. Fog and low clouds often form during the early morning hours, but conditions usually improve soon after sunrise. Conditions less than 300/1 are observed up to 8 percent of the time from midnight to 0900 LST but less than 2 percent at other hours. Thunderstorms occur on 3-4 days each month. Runway crosswinds are usually not a problem during this season, except in the vicinity of thunderstorms.

5. EXPOSURE WEATHER. Morning fog and afternoon showers or thunderstorms are the principal restrictions to outdoor activities.

<u>PARIS, FRANCE</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	99	103	98
Mean Maximum	72	76	75
Mean Minimum	53	57	56
Absolute Minimum	39	46	45
<u>MEAN PRECIPITATION (INCHES)</u>	2.2	2.2	2.6
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	12	12	12
Thunderstorms	4	5	4

6. PARADROP WEATHER. Fair. Conditions are favorable 40-65 percent of the time. Ceilings less than 1500 feet and/or visibility less than 1 mile are the main restrictions, with the hours of 0000-0900 LST having the highest frequency of unfavorable conditions.

7. ASTRONOMICAL DATA. Paris, France. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0305	0322	0407
Last Light	2037	2029	1941

Prepared: 29 December 1981

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is mostly cloudy and relatively mild with frequent precipitation. Mean cloudiness is 55-80 percent. Mean daily maximum temperatures decrease from the 60's (F) in September to the upper 40's in November. Mean minimums decrease from the 50's to near freezing. Precipitation occurs on 8-18 days per month, with mean monthly amounts of 2-6 inches. Thunderstorms occur on 1-4 days per month. Gale force winds (28 knots or greater) occur on 1 day per month or less.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 40-85 percent of the time; less than 1500/3, 30-60 percent; and less than 500/1, 10-25 percent. In general, best flying weather occurs in the southern and eastern portions of the country.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Paris, France. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur about 5 percent of the time in September and 10-20 percent in November. The principal cause of these low conditions is radiational fog, which forms during early morning and usually clears by late morning.

5. EXPOSURE WEATHER. Outdoor activities can be restricted by rain, fog, and high humidity. Temperatures become chilly by the end of the season.

<u>PARIS, FRANCE</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	91	82	68
Mean Maximum	69	60	48
Mean Minimum	52	46	39
Absolute Minimum	38	25	21
MEAN PRECIPITATION (INCHES)	2.2	2.0	2.1
MEAN NUMBER OF DAYS			
Precipitation	12	14	15
Thunderstorms	2	2	*

* = less than 0.5 day

6. PARADROP WEATHER. Poor. The early morning hours are worst, due to a high incidence of fog formation. Afternoon and evening hours are frequently rainy with cloud cover below 1500 feet, so that overall only 5-10 days of favorable weather each month can be expected.

7. ASTRONOMICAL DATA. Paris, France. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0454	0538	0624
Last Light	1836	1734	1646

(Prepared: 7 June 1979)

SITUATION CLIMATIC BRIEF

FEDERAL REPUBLIC OF GERMANY (FRG)

NOVEMBER - MARCH

1. GENERAL. Throughout Germany, winter is normally a stormy, cool, wet, and cloudy season, although there are periods of cold, clear, and windy weather. During this season, fronts frequently pass through the area causing very changeable weather. Temperatures are often at or near freezing. Occasional outbreaks of cold air from the east or northeast produce partly cloudy to clear skies, gusty surface winds, and subzero temperatures that can persist for several days. Winter storms can start early in fall or last late into spring.

2. FLYING WEATHER. Generally fair to poor with the poorest conditions occurring in December and January. Ceiling/visibility less than 5000 feet and/or 6 miles 75-85 percent of the time improves to only 60-65 percent during March. Ceiling/visibility less than 1500/3 occurs 35-45 percent, again showing gradual improvement in March when it can be expected 15-20 percent. Ceiling/visibility less than 500/1 occurs 8-15 percent, but depends on station elevation and the surrounding terrain. If cold, dry air invades the area much improved ceiling/visibility conditions will prevail over the entire country. These outbreaks can be expected on 5-10 days per month. Mountainwave turbulence and aircraft icing pose a threat.

3. RECONNAISSANCE WEATHER. The mean number of days with sky cover less than 2/8 and visibility greater than 3 miles is 3-6 days. At other times thick low or middle level clouds obscure the ground.

4. TERMINAL WEATHER. Fair to poor depending on location. At mountain stations, ceiling/visibility less than 300/1 occurs 20-30 percent of the time during the night. At valley stations and in the northern quarter of the country, the percentage frequency of occurrence drops to 15-20 percent during the early morning and 5-10 percent during the day. The daily probability of precipitation ranges from 60 to 70 percent with freezing rain and/or drizzle occurring 1-5 percent of the days. Obstructions to visibility occur 90 percent of the days.

5. EXPOSURE WEATHER. Cloudy, wet, windy, and cool days with poor visibility, especially in the early morning hours. The combination of cold temperatures, gusty winds, and frequent precipitation make for uncomfortable winter conditions. Temperatures are in the mid 20's (F) near sunrise and the high 30's in the midafternoon.

<u>RAMSTEIN AB, GERMANY</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)					
Absolute Maximum	68	66	55	67	76
Mean Maximum	45	38	37	41	49
Mean Minimum	34	29	27	27	31
Absolute Minimum	10	0	-8	-9	3
MEAN PRECIPITATION (INCHES)	2.2	2.2	2.2	2.0	1.7
MEAN NUMBER OF DAYS					
Precipitation	19	19	21	19	18
Snowfall	5	10	11	10	6
Thunderstorms	*	*	*	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Generally very poor due to frequent precipitation, low morning visibilities, and gusty winds. Conditions at Ramstein AB are unfavorable 30-45 percent of the time.

7. ASTRONOMICAL DATA. Ramstein AB, Germany. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0637	0711	0716	0638	0543
Last Light	1652	1638	1702	1753	1836

(Prepared: 8 June 1979)

APRIL - MAY

1. GENERAL. The storminess of winter gives way to the short duration showers of spring. Cloudiness diminishes, visibilities improve, and temperatures continue to rise. Thunderstorm days increase from 1-2 days in April to 6 days in May. Note that a late winter storm in the North Atlantic/North Sea area may bring winter conditions to West Germany as late as May.

2. FLYING WEATHER. Significantly better in spring. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-50 percent of the time; less than 1500/3, 5-25 percent; and less than 500/1, 2-5 percent. Turbulence and icing can interfere with air operations.

3. RECONNAISSANCE WEATHER. Fair over most of the country. Visibility is greater than 3 miles 90-95 percent of the time.

4. TERMINAL WEATHER. Ceiling/visibility less than 300/1 is rare over most of Germany except along the extreme northwestern coast where it can be expected 10-15 percent of the time. Nighttime and early morning fog restrict visibilities.

5. EXPOSURE WEATHER. Typically cloudy and mild with frequent rain.

<u>RAMSTEIN AB, GERMANY</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	85	89
Mean Maximum	57	65
Mean Minimum	36	43
Absolute Minimum	19	24
<u>MEAN PRECIPITATION (INCHES)</u>	2.0	2.0
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	18	18
Thunderstorms	1	4

6. PARADROP WEATHER. Fair to good in spring. The best conditions are found at night or in the early morning hours with 80 percent probability of favorable conditions throughout central and southern Germany. In the northern plains, the maximum percentage is in the low 70's. The poorest time for paradrop is in the midafternoon in the northern plains where favorable conditions drop to only 35 percent. This decrease is due to frequent precipitation and gusty surface winds.

7. ASTRONOMICAL DATA. Ramstein AB, Germany. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0436	0336
Last Light	1926	2017

(Prepared: 8 June 1979)

JUNE - AUGUST

1. GENERAL. The summer is relatively cool and wet with frequent thunderstorms. Although there are occasional periods of hot, dry weather, cool and moist air from the North Atlantic Ocean normally blankets the area. Clear skies occur on 6-12 days per month during the summer. Visibility reaches a maximum at this time.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-50 percent of the time; less than 1500/3, 10-15 percent; and less than 500/1, 2-4 percent. Coastal locations have more low cloudiness than other regions.

3. RECONNAISSANCE WEATHER. Good for most locations. Sky cover less than 2/8 and visibility greater than 3 miles occurs 40 percent of the time. Location and terrain greatly influence this statistic. Coastal locations and the north side of the highlands have significantly poorer conditions.

4. TERMINAL WEATHER. Terrain effects play an important role throughout the country. Ceiling/visibility less than 300/1 occurs 3-5 percent of the time. However, low ceilings and poor visibilities can be expected with rain showers and thunderstorms.

5. EXPOSURE WEATHER. Partly cloudy and mild with frequent showers or thunderstorms during the summer.

<u>RAMSTEIN AB, GERMANY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	98	100	96
Mean Maximum	71	74	73
Mean Minimum	49	52	51
Absolute Minimum	31	37	36
MEAN PRECIPITATION (INCHES)	2.5	2.3	2.7
MEAN NUMBER OF DAYS			
Precipitation	17	16	17
Thunderstorms	5	6	5

6. PARADROP WEATHER. Favorable 75-80 percent of the time. This frequency drops to 50 percent in the midafternoons along the coastal and windward slopes.

7. ASTRONOMICAL DATA. Ramstein AB, Germany. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0306	0327	0414
Last Light	2055	2044	1955

Prepared: 8 June 1979)

SEPTEMBER - OCTOBER

1. GENERAL. October is a time of rapid deterioration in weather conditions. The incidence of morning fog and poor visibilities increases rapidly. Thunderstorm activity decreases from 8 days per month in summer to less than 1 day in November. While September is frequently very similar to summer, frontal activity

from the North Atlantic begins to affect the country. Strong frontal activity can bring winter-like conditions, including heavy snow. Cloudiness increases significantly for coastal and northern plain areas in September and early October, and for the rest of the country in October and early November.

2. FLYING WEATHER. Between periods of frontal activity, conditions are fair to good in September and poor to fair in October. Ceiling/visibility conditions less than 5000 feet and/or 6 miles occurs 50-60 percent of the time in September and 70-80 percent in October; less than 1500/3, 20-25 percent in September and 35-40 percent in October; less than 500/1, 8-10 percent in September and 15-20 percent in October. Aircraft icing conditions can be encountered in strong frontal zones and in areas where clouds are formed as air is lifted by terrain features. Mountain-wave turbulence increases in likelihood and severity.

3. RECONNAISSANCE WEATHER. Fair to good in September but deteriorates rapidly in October. In southern Germany occasional downslope winds bring clearing skies. In October, the mean number of days with sky cover less than 2/8 and visibility 3 miles or greater ranges from 2-20 days during the early morning and 5-15 days during the evening.

4. TERMINAL WEATHER. Late October is one of the foggiest times of the year in West Germany. Ceiling/visibility less than 300/1 occurs 8-10 percent of the time in September and 12-20 percent in October. These conditions usually improve by afternoon.

5. EXPOSURE WEATHER. Cool and cloudy with an increase in fog.

<u>RAMSTEIN AB, GERMANY</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)		
Absolute Maximum	88	79
Mean Maximum	67	57
Mean Minimum	46	39
Absolute Minimum	30	21
MEAN PRECIPITATION (INCHES)	2.0	1.7
MEAN NUMBER OF DAYS		
Precipitation	15	16
Snowfall	0	*
Thunderstorms	3	1

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 40-50 percent of the time during early morning increasing to 70-80 percent by the afternoon.

7. ASTRONOMICAL DATA. Ramstein AB, Germany. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>
First Light	0503	0549
Last Light	1847	1741

(Prepared: 10 May 1979)

SITUATION CLIMATIC BRIEF
GERMAN DEMOCRATIC REPUBLIC (GDR)
NOVEMBER - MARCH

1. GENERAL. Winter weather is cold, cloudy, and windy with light to moderate snowfall. Skies are clear 10-20 percent; partly cloudy, 10-15 percent; cloudy, 20-25 percent; and overcast, 40-60 percent of the time. Precipitation occurs on 13-20 days per month with snow showers expected on 3-18 of these days. Maximum snow depths of 10-16 inches have been recorded in the central and northern plains. In the southern highlands region, snow depths of 4 to 10 feet have been measured. Freezing rain and/or drizzle occurs on 1 day per month. Gusty surface winds in excess of 16 knots are expected 5-10 percent of the time; gale force winds are rare.

2. FLYING WEATHER. Generally poor due to heavy cloudiness, fog, and snow showers. Ceiling/visibility is equal to or greater than 5000 feet and/or 6 miles, 20-35 percent; 1500/3, 50-75 percent; and 500/1, 85-95 percent of the time. Visibility can be severely restricted due to fog in the early morning hours.

3. RECONNAISSANCE WEATHER. Generally poor. Sky cover equal to or less than 2/8 and visibility greater than 3 miles occurs 15-30 percent of the time. Afternoon hours are the most favorable.

4. TERMINAL WEATHER. Templehof Airport. Cold and cloudy with frequent rain or snow showers. Ceiling/visibility less than 300/1 occurs approximately 1-8 percent of the time with the highest incidence during December through February. Visibility is less than 6 miles 45-70 percent of the time. Primary visibility restrictions are fog, haze, or smoke.

5. EXPOSURE WEATHER. Cold and wet. Temperatures in the central plains during the coldest months range from the mid 20's (F) in the morning hours to the mid 30's in the afternoon. In the southern highlands region, temperatures are in the mid teen's in the morning and the low 30's in the afternoon. Snowfall can be very heavy in the southern highlands.

<u>TEMPLEHOF AIRPORT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)					
Absolute Maximum	69	60	54	61	77
Mean Maximum	44	37	35	37	45
Mean Minimum	37	31	28	28	32
Absolute Minimum	8	-5	-1	-7	6
MEAN PRECIPITATION (INCHES)	1.9	1.8	1.7	1.4	1.2
MEAN NUMBER OF DAYS					
Precipitation	15	17	17	13	14
Snowfall	3	6	9	7	5
Thunderstorms	*	*	0	0	1

* = less than 0.5 day

6. PARADROP WEATHER. Generally unfavorable due to low clouds, poor visibility, and winds in excess of 13 knots. Weather conditions are favorable 30-40 percent of the time. The most favorable time is generally between 2000-0400 local.

7. PORT/BEACH CONDITIONS. Winds in the coastal region are greater than 16 knots 30-50 percent, and gale force, 5-20 percent of the time. In the northwestern coastal area, amphibious landing craft and/or small boats would encounter rough seas 5-10 percent of the time. In the Baltic Sea area, rough seas would be encountered 25-30 percent of the time in November-January, 15 percent in February, and 5 percent in March.

8. ASTRONOMICAL DATA. Templehof Airport. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0650	0729	0731	0649	0548
Last Light	1652	1634	1702	1754	1844

(Prepared: 7 June 1979)

APRIL - MAY

1. GENERAL. Spring weather is cloudy and cool with frequent rain and occasional snow in April. Skies are clear 10-15 percent of the time; partly cloudy, 10-30 percent; cloudy, 25-40 percent; and overcast, 25-40 percent. Generally, cloudiness is heaviest in the southern highlands region. Precipitation is expected on 12-16 days per month. Snowfall is expected on 1-7 days in April with most frequent occurrences in the southern highlands. Snowfall is rare in May. On the northern coast, gusty surface winds in excess of 16 knots occur 20-30 percent of the time; gale force, 1-5 percent. Over the rest of the German Democratic Republic gusty winds occur 5 percent of the time; gale force, less than 1 percent.

2. FLYING WEATHER. Fair to good. The percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles ranges from 30-35 percent in the north to 70 percent in the southern highlands. Ceiling/visibility less than 1500/3 ranges from 10-15 percent in the north to 25 percent in the southern highlands. Ceiling/visibility less than 500/1 ranges from 1 percent in the north to 5 percent in the southern highlands.

3. RECONNAISSANCE WEATHER. Generally poor. The percentage frequency that the sky cover is equal to or less than 2/8 and the visibility is greater than 3 miles ranges from 20 to 30 percent. Generally, the southern highlands have the highest incidence of cloudiness and low visibility.

4. TERMINAL WEATHER. Berlin, GDR. Cloudy and cool with frequent rain showers. The percentage frequency that the ceiling/visibility is less than 300/1 is approximately 1 percent, occurring primarily in the early morning. Precipitation is expected on 13-14 days per month, snowfall on 2 days in April, and rarely in May. Snow depth on the ground rarely exceeds 1 inch. Runway crosswinds in excess of 15 knots are expected 1-3 percent of the time. Gusty surface winds in excess of 16 knots occur 5 percent of the time; gale force winds are rare.

5. EXPOSURE WEATHER. Cool and cloudy with frequent light rainfall and an occasional snow shower.

<u>BERLIN, GDR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	85	92
Mean Maximum	55	65
Mean Minimum	38	46
Absolute Minimum	20	28
<u>MEAN PRECIPITATION (INCHES)</u>	1.7	1.9
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	14	13
Snowfall	2	*
Thunderstorms	1	4

* = less than 0.5 day

6. PARADROP WEATHER. Favorable in the Berlin area 50-75 percent of the time. The weather is unfavorable primarily due to low clouds and winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Berlin, GDR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0434	0329
Last Light	1941	2038

(Prepared: 6 June 1979)

JUNE - AUGUST

1. GENERAL. Summer weather is warm and cloudy with frequent rain showers and thunderstorms. Mean maximum temperatures are in the mid 60's (F) in the southern highlands and the mid 70's in the remainder of the German Democratic Republic (GDR). Skies are clear 10-15 percent, partly cloudy, 20-35 percent; cloudy, 30-40 percent; and overcast, 15-30 percent of the time. Rain is expected on 10-14 days per month; thunderstorms, 2-5 days per month. Rain is very heavy at times. The visibility is frequently obstructed by haze/smoke or early morning fog. Gusty surface winds in excess of 16 knots are expected less than 5 percent of the time over most of the GDR. However, on the northern coast gusty surface winds are expected 10-20 percent, gale force winds 1 percent of the time.

2. FLYING WEATHER. Fair to good. In the central and northern sections the percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles ranges from 20 to 25 percent; less than 500/3, from 5 to 10 percent. Ceiling/visibility less than 500/1 is rare. In the southern highlands, ceiling/visibility less than 5000/6 ranges from 55 to 60 percent; less than 1500/3, from 20 to 25 percent; and less than 500/1, approximately 5 percent. Flying activities may be restricted for short periods due to heavy rainfall or early morning fog, particularly in the southern highlands.

3. RECONNAISSANCE WEATHER. Fair to poor. The percentage frequency that the sky cover is equal to or less than 2/8 and the visibility is 3 miles or greater ranges from 25 to 40 percent. Generally, weather conditions are more favorable in the north and least favorable in the southern highlands. Visibility may be restricted by haze/smoke or early morning fog.

4. TERMINAL WEATHER. Berlin, GDR. Warm and cloudy with frequent rainfall. Ceiling/visibility less than 300/1 is rare. The visibility is less than 6 miles 10-15 percent, less than 3 miles 2-4 percent of the time. Visibility less than 1 mile is rare. The primary restrictions to visibility are from early morning fog and haze/smoke. Runway crosswinds in excess of 15 knots are expected 1 percent of the time. Gusty surface winds in excess of 16 knots are expected approximately 1 percent; gale force winds are rare.

5. EXPOSURE WEATHER. Warm and cloudy with frequent rainfall.

<u>BERLIN, GDR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	95	100	97
Mean Maximum	72	75	73
Mean Minimum	54	58	56
Absolute Minimum	35	43	43
MEAN PRECIPITATION (INCHES)	2.4	3.1	2.3
MEAN NUMBER OF DAYS			
Precipitation	13	14	14
Thunderstorms	5	5	4

6. PARADROP WEATHER. Favorable in the Berlin area 65-85 percent of the time. Weather conditions are unfavorable due primarily to low cloudiness.

7. ASTRONOMICAL DATA. Berlin, GDR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0253	0314	0409
Last Light	2121	2110	2012

(Prepared: 9 May 1979)

SEPTEMBER - OCTOBER

1. GENERAL. Autumn weather is cool and cloudy with light precipitation and an occasional snow shower. Skies are clear 15-20 percent; partly cloudy, 20-30 percent; cloudy, 25-30 percent; and overcast, 25-40 percent of the time. Precipitation is expected on 12-17 days per month depending upon location. Thunderstorms are infrequent. Snow is expected on 1 day in October in the central and northern regions and 1-7 days in the southern highlands region. Visibility is restricted to less than 6 miles on 85-95 percent of the days due to early morning fog and/or haze or smoke.

2. FLYING WEATHER. Generally good in September, but deteriorates from fair to poor in October. The main hazard is low ceilings, primarily during the morning hours. Ceiling/visibility less than 500 feet/1 mile occurs 15-20 percent of the time during the morning hours in October. Overall, conditions less than 5000/6 are experienced about 75 percent of the time in October. Conditions less than 1500/3 occur about 40 percent of the time.

3. RECONNAISSANCE WEATHER. Generally poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs about 35 percent of the time in September and 30 percent in October.

4. TERMINAL WEATHER. Generally good in September and fair in October. Ceiling/visibility less than 300/1 occurs 1-2 percent of the time during the morning hours in September and 8-10 percent in October. Thunderstorms can be expected on 1 day during September, but they rarely occur in October.

5. EXPOSURE WEATHER. Cool and cloudy with light precipitation and an occasional snow shower.

BERLIN, GERMANYSEPOCTTEMPERATURE (F)

Absolute Maximum

94

77

Mean Maximum

66

55

Mean Minimum

48

41

Absolute Minimum

31

15

MEAN PRECIPITATION (INCHES)

1.7

1.8

MEAN NUMBER OF DAYS

Precipitation

13

14

Snowfall

0

*

Thunderstorms

1

*

* = less than 0.5 day

6. PARADROP WEATHER. Favorable in the Berlin area 60-70 percent of the time. Unfavorable weather is due primarily to low clouds and gusty winds in excess of 13 knots.

7. PORT/BEACH CONDITIONS. Winds are greater than 16 knots 30-40 percent of the time; gale force 5-10 percent. Amphibious landing craft and/or small boats may encounter rough seas 5 percent of the time in the northwestern coastal areas and 10-20 percent in the Baltic Sea area.

8. ASTRONOMICAL DATA. Berlin, Germany. (Date as of the 15th/local standard time)

CIVIL TWILIGHTSEPOCT

First Light

0505

0557

Last Light

1857

1748

(Prepared: 13 January 1982)

SITUATION CLIMATIC BRIEF

GREECE THE CENTRAL REGION*

DECEMBER - MARCH

1. GENERAL. Winter in Greece is partly to mostly cloudy and mild with strong winds at coastal and island locations. Mean cloud cover varies from 40-50 percent at inland locations to 55-65 percent at island and coastal sites. The region's close proximity to the Aegean and Ionian Seas has a moderating effect on temperatures; mean daily minimums range from 35F to 50F and maximums from 50F to 65F. It rains throughout much of the region on 10-15 days each month with snow reaching only the highest elevations, at inland locations. Thunderstorms are rare. Gale force winds (28 knots or greater) occur infrequently at most inland locations, but occur up to 5 days per month at some island and coastal stations. The sirocco, a warm, dry southerly wind, occasionally causes unseasonably warm and dry conditions and may be accompanied by blowing sand or dust.

2. FLYING WEATHER. Fair to poor. Low cloud ceilings and rain adversely affect flying at several island and northern valley locations. Mountain peaks and ridges are often obscured by the region's extensive cloudiness. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 25-50 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 2-5 percent. Aircraft icing and turbulence are most frequently encountered over the northern mountains in association with the fronts and migratory storms which traverse the area. In addition, the Gulf of Corinth area is well known for its violent, local eddies, a phenomenon that can be extremely hazardous to aircraft.

3. RECONNAISSANCE WEATHER. Fair to poor. Extensive cloud cover during the morning makes conditions poor. Afternoons are slightly better as visibilities improve. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-10 days per month during the morning and on 10-15 days during most afternoons.

4. TERMINAL WEATHER. Athens, Greece. Fair. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time. Visibilities restricted by fog or rain to less than 3 miles and runway crosswinds in excess of 15 knots occur 20 percent of the time.

5. EXPOSURE WEATHER. The weather is normally mild to cool, damp, and windy, making outside conditions uncomfortable.

<u>ATHENS, GREECE</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>				
Absolute Maximum	72	72	77	84
Mean Maximum	57	55	55	60
Mean Minimum	46	42	43	46
Absolute Minimum	24	20	21	20
<u>MEAN PRECIPITATION (INCHES)</u>	2.8	2.2	1.6	1.4
<u>MEAN NUMBER OF DAYS</u>				
Precipitation	14	14	12	10
Snowfall	1	1	1	1
Thunderstorms	1	1	1	1

6. PARADROP WEATHER. Fair to poor. Conditions are favorable for paradrops from 30 to 80 percent of the time. Frequent rain and gusty surface winds are factors likely to affect the success of most operations.

* The Central Region lies between approximately 37°30' and 40°.

7. ASTRONOMICAL DATA. Athens, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0504	0511	0449	0411
Last Light	1536	1558	1630	1658

(Prepared: 13 January 1982)

APRIL - MAY

1. GENERAL. Spring is a short transitional period characterized by partly cloudy skies, frequent rainfall, and mild to warm daytime temperatures. Mean cloud cover varies from 35-55 percent with the greatest coverage over northern locations. Average daily minimum temperatures are generally in the 40's (F) and 50's. Mean maximums range from near 60F to 80F. Precipitation frequency decreases through the season with rain falling on 5-10 days each month. It rarely snows at higher elevations. Thunderstorms are infrequent, occurring on 1-3 days at coastal locations. Although gale force winds (28 knots or greater) are quite rare, the sirocco, a dry and warm southerly wind, sometimes approaches gale force, affecting primarily the extreme southern locations.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, 1-5 percent. Flight operations are occasionally affected by precipitation and low ceilings at mountain and island locations. Turbulence and icing are most frequently encountered over the northern mountains where peaks and ridges are frequently obscured by clouds.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 8-18 days per month. The most favorable conditions are usually observed during the evening, after clouds dissipate. With the intrusion of dry air over the region, May becomes the best month for operations.

4. TERMINAL WEATHER. Athens, Greece. Fair. Rain, fog, and haze reduce visibilities to less than 6 miles up to 35 percent of the time during the morning. However, ceiling/visibility less than 300/1 occurs 2 percent of the time. Crosswinds in excess of 15 knots occur 10-15 percent of the time mainly during early afternoon periods.

5. EXPOSURE WEATHER. Mild to warm temperatures make conditions quite comfortable. Frequent, occasionally heavy rain, especially along the western slopes of the Pindus Mountains, may limit certain outdoor activities.

<u>ATHENS, GREECE</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	91	101
Mean Maximum	67	77
Mean Minimum	52	60
Absolute Minimum	35	42
<u>MEAN PRECIPITATION (INCHES)</u>	0.8	0.8
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	9	9
Thunderstorms	1	2

6. PARADROP WEATHER. Fair to good. Favorable paradrop conditions occur from 50-90 percent of the time. Strong afternoon winds, precipitation, and low ceilings over mountains are the most frequent limiting factors. Optimal conditions are most likely during late afternoon and evening hours.

7. ASTRONOMICAL DATA. Athens, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0324	0246
Last Light	1727	1757

(Prepared: 13 January 1982)

JUNE - SEPTEMBER

1. GENERAL. Summer is typically clear, dry, and hot. Mean cloud cover varies from 15-30 percent in June and September, but averages only 5-15 percent in July and August. Mean daily minimum temperatures range from 60F to 75F. Maximums vary from 80F to 95F. Rain occurs an average of 5 days a month with meager accumulations. Thunderstorms are rare at all but a few valley locations in the south where they occur on 1-3 days each month. Gale force winds (28 knots or greater) are rare; however, the sirocco, a dry and warm southerly wind, sometimes approaches gale force and most frequently affects the extreme southern locations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-20 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, 1-3 percent. Ceilings between 1500 and 5000 feet are most likely during the afternoon while those less than 1500/3 are most frequently observed at island and coastal locations during the morning. Turbulence is encountered over the mountains during afternoons, coincident with maximum heating.

3. RECONNAISSANCE WEATHER. Good. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 20-30 days per month. Conditions are slightly less favorable during the afternoon than at other times.

4. TERMINAL WEATHER. Athens, Greece. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. However, haze and smoke restrict visibility to less than 6 miles about 25 percent of the time during morning hours. Crosswinds of 15 knots occur about 10 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Island and coastal locations become hot and humid while inland locations are quite comfortable.

<u>ATHENS, GREECE</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
<u>TEMPERATURE (F)</u>				
Absolute Maximum	109	108	111	104
Mean Maximum	85	90	90	83
Mean Minimum	67	72	72	66
Absolute Minimum	54	50	59	46
<u>MEAN PRECIPITATION (INCHES)</u>	0.6	0.2	0.4	0.6
<u>MEAN NUMBER OF DAYS</u>				
Precipitation	6	2	2	4
Thunderstorms	2	1	1	2

6. PARADROP WEATHER. Good to fair. Conditions are favorable for paratroops 40-90 percent of the time. Wind in excess of 13 knots poses the greatest problem to operational success, particularly during afternoons at coastal and island locations.

7. ASTRONOMICAL DATA. Athens, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0231	0244	0312	0340
Last Light	1820	1818	1747	1700

(Prepared: 13 January 1982)

OCTOBER - NOVEMBER

1. GENERAL. Autumn is a period of partly cloudy skies, increasing precipitation, and mild temperatures. Average cloudiness varies from 35-65 percent. Mean daily minimum temperatures range from 45F to 65F. Maximums are in the 60's and 70's at most locations. It rains on 6-12 days per month with accumulations of up to 7 inches in the Ionian Islands. Thunderstorms are infrequent, most stations having them on 1-3 days each month. Although gale force winds (28 knots or greater) are rare, the sirocco, a warm, dry wind, often attains speeds of 15-20 knots during the afternoon and may carry dust or sand from the deserts of North Africa.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 10-15 percent; and less than 500/1, 5-10 percent (up to 15 percent at some southeastern island locations). Frequent, sometimes heavy rain showers in association with low ceiling/visibility are the most common restrictions to flight operations. Turbulence is most likely to be encountered over inland mountain areas during the afternoon.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days during October, but only on 5-14 days during November. Haze, smoke, and fog are usual morning restrictions to visibility while extensive cloud cover becomes the prime limitation to afternoon operations.

4. TERMINAL WEATHER. Athens, Greece. Fair. Ceiling/visibility less than 300/1 occurs about 3 percent of the time due primarily to haze, smoke, and rain. Runway crosswinds of 15 knots or greater occur 15 percent of the time.

5. EXPOSURE WEATHER. A very comfortable season due to mild temperatures at most locations.

<u>ATHENS, GREECE</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	95	87
Mean Maximum	74	64
Mean Minimum	60	52
Absolute Minimum	43	30
<u>MEAN PRECIPITATION (INCHES)</u>	1.7	2.8
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	9	12
Thunderstorms	2	2

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops from 40-70 percent of the time. Frequent precipitation and winds in excess of 13 knots are the most common restrictors. Late afternoon has the best overall conditions for paradrop operations.

7. ASTRONOMICAL DATA. Athens, Greece. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

OCT

NOV

First Light

0406

0437

Last Light

1615

1542

(Prepared: 8 January 1982)

SITUATION CLIMATIC BRIEF

GREECE THE NORTHERN REGION*

DECEMBER - MARCH

1. GENERAL. Winter is a period of unsettled weather with generally cloudy skies, cool temperatures, and frequent rain and snow. Mean cloud cover varies from 55-75 percent with December and January somewhat more cloudy. Average daily minimum temperatures are mostly in the 20's and 30's (F). Mean maximums range from 40F to 60F. Precipitation occurs on 5-10 days per month and is slightly more likely to be rain than snow with average monthly accumulations of 3 inches. Both thunderstorms and gale force winds (28 knots or greater) are infrequent phenomena, affecting most locations about one day each month. Two special mountain winds deserve mention; the vardarac, a cold northerly wind that can reach speeds of 30 knots, and the liva, a drainage wind that warms and dries as it descends into valleys.

2. FLYING WEATHER. Fair to poor. Migratory storms frequently result in extensive low cloudiness, aircraft icing, and turbulence, thereby, making flying conditions potentially hazardous over much of the region. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 25-50 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, up to 5 percent.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater range from 6-14 days a month. Generally, conditions are best for operations during the late afternoon/evening hours. March is the best month.

4. TERMINAL WEATHER. Thessaloniki, Greece. Fair. Ceiling/visibility less than 300/1 occurs about 5 percent of the time during early morning hours. Visibility is reduced by fog or rain up to 30 percent of the time during the morning but seldom to less than 3 miles. Surface winds are often from the north or east with average speeds of 10 knots.

5. EXPOSURE WEATHER. Generally a cool, damp, and windy season, making conditions slightly uncomfortable.

<u>THESSALONIKI, GREECE</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)				
Absolute Maximum	71	67	75	86
Mean Maximum	52	49	52	58
Mean Minimum	41	36	38	44
Absolute Minimum	19	7	10	21
MEAN PRECIPITATION (INCHES)	1.8	1.4	1.2	1.5
MEAN NUMBER OF DAYS				
Precipitation	9	8	8	9
Snowfall	1	2	2	1

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrop operations 50-80 percent of the time. Frequent precipitation and winds exceeding 13 knots are the prime restrictions.

* The Northern Region consists of mostly mountains and hills and includes all of Greece north of 40 degrees latitude.

7. ASTRONOMICAL DATA. Thessaloniki, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0513	0520	0455	0414
Last Light	1533	1555	1631	1701

(Prepared: 8 January 1982)

APRIL - MAY

1. GENERAL. Spring in northern Greece is a brief transitional period marked by partly cloudy skies, frequent precipitation, and mild daytime temperatures. The decreased frequency of migratory storms tends to bring improved conditions to the region compared to those experienced during winter. Mean cloudiness seldom deviates from 50-60 percent. Those locations near the Aegean Sea usually report the highest temperatures with mean daily minimums ranging from 40F to 60F, while maximums are in the 60's and 70's. Precipitation usually occurs as light rain, but very heavy rain showers are not uncommon to the higher elevations and flooding sometimes occurs in adjacent valleys and inlets. Thunderstorm activity increases from 1-2 days during April to 2-6 such days in May. Even though gale force winds (28 knots or greater) are rare, the sirocco, a hot southerly wind, may reach speeds of 15-20 knots, primarily affecting the southern sections of the region.

2. FLYING WEATHER. Fair. Rain showers and low clouds frequently obscure mountain ridges and peaks during the afternoon. Due to the increased thunderstorm activity during May, aircraft are apt to encounter icing and turbulence over the northern sections of the region. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 3-5 percent; and less than 500/1, up to 2 percent.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 7-14 days per month. Afternoons are poorest due to the widespread rain shower activity.

4. TERMINAL WEATHER. Thessaloniki, Greece. Good. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time.

5. EXPOSURE WEATHER. Mild temperatures make spring comfortable. However, the frequent rainfall may affect outdoor activities at most locations and strong southerly winds sometimes carry dust into the southern portions of the region.

<u>THESSALONIKI, GREECE</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	88	96
Mean Maximum	67	77
Mean Minimum	50	59
Absolute Minimum	33	40
<u>MEAN PRECIPITATION (INCHES)</u>	1.6	2.1
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	9	10
Thunderstorms	1	4

6. PARADROP WEATHER. Fair to good. Favorable paradrop conditions occur 60-90 percent of the time. Rain or rain showers occasionally affect operations during the afternoon while, during mornings, low clouds and fog restrict conditions at higher elevations.

7. ASTRONOMICAL DATA. Thessaloniki, Greece. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	<u>APR</u>	<u>MAY</u>
First Light	0322	0241
Last Light	1735	1808

(Prepared: 8 January 1982)

JUNE - SEPTEMBER

1. GENERAL. Summer throughout northern Greece is partly cloudy, hot, and moderately humid. Mean amounts of cloudiness vary from 20-45 percent. Mean daily temperatures peak during July and August; minimums are mostly in the 60's (F) and maximums from 75F to 95F. Rain occurs on 4-8 days per month with average accumulations of 1-2 inches. Rain showers and thunderstorms occur with maximum frequency during June when 3-7 such days can be expected. Gale force winds (28 knots or greater) are infrequent; however, a special wind, known as the etesian, blows from the north and occasionally reaches gale force.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500/3, 3-5 percent; and less than 500/1, 2 percent. Afternoon thunderstorms and rain showers most frequently affect flight operations during June, especially over mountainous terrain. Shower activity coupled with strong winds increase the risk of aircraft icing, turbulence, and wind shear.

3. RECONNAISSANCE WEATHER. Fair to good. Conditions during June and September are only fair due to afternoon rain showers/thunderstorms and associated extensive cloudiness. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days during June and 15-25 days during the remaining summer months.

4. TERMINAL WEATHER. Thessaloniki, Greece. Good. Ceiling/visibility less than 300/1 occurs up to 2 percent of the time.

5. EXPOSURE WEATHER. The high daytime temperatures coupled with moderate humidities make conditions uncomfortable. Additionally, frequent rain during June may adversely affect outdoor activities.

<u>THESSALONIKI, GREECE</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
<u>TEMPERATURE (F)</u>				
Absolute Maximum	101	107	109	99
Mean Maximum	85	91	90	81
Mean Minimum	66	71	70	64
Absolute Minimum	47	45	56	46
<u>MEAN PRECIPITATION (INCHES)</u>	1.4	1.0	0.9	1.3
<u>MEAN NUMBER OF DAYS</u>				
Precipitation	8	5	4	6
Thunderstorms	6	3	2	2

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paratroops 65-90 percent of the time. Winds in excess of 13 knots, which usually occur at coastal or northern mountain locations, and frequent rain showers during June and September affect operations. Late evening to early morning is the best time to conduct operations.

7. ASTRONOMICAL DATA. Thessaloniki, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0224	0237	0309	0341
Last Light	1833	1830	1756	1705

(Prepared: 8 January 1982)

OCTOBER - NOVEMBER

1. GENERAL. Autumn days are partly cloudy, mild, and frequently wet. Cloudiness varies from a mean of 50 percent during October to about 65 percent in November. Cloud amounts normally decrease from north to south. Mean daily minimum temperatures range from 40F to 55F. Maximums exhibit a greater variation between locations, averaging 50F to 75F. Rain is the most common type of precipitation and occurs on 8-9 days per month with greatest accumulations during November. Thunderstorms and gale force winds (28 knots or greater) are infrequent. However, the livia, a cold drainage wind, typically warms and attains near gale force speeds upon reaching valley floors in the western mountains of the region.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 3-5 percent; and less than 500/1, 2 percent. Haze and fog reduce visibility during most mornings at extreme northern locations. Peaks and ridges are commonly obscured by low clouds and rain showers during the afternoon. Turbulence occurs over the most mountainous terrain and aircraft icing may constitute a flight hazard over any part of the region.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 6-16 days each month. October is usually fair, but November is poor due to increased cloudiness, haze, fog, and rain.

4. TERMINAL WEATHER. Thessaloniki, Greece. Good to fair. November is characterized by increased precipitation and restricted visibility, although seldom to less than 3 miles. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time, usually during early morning.

5. EXPOSURE WEATHER. Frequent precipitation during November detracts from the otherwise comfortable conditions of most days.

<u>THESSALONIKI, GREECE</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	97	81
Mean Maximum	72	60
Mean Minimum	57	47
Absolute Minimum	33	23
<u>MEAN PRECIPITATION (INCHES)</u>	2.3	2.5
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	9	9
Thunderstorms	1	1
Snowfall	0	1

6. PARADROP WEATHER. Fair to good. Favorable paradrop conditions occur 45-85 percent of the time. Frequent precipitation and reduced visibility due to haze, fog, or rain affect paradrop operations.

7. ASTRONOMICAL DATA. Thessaloniki, Greece. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

OCT

NOV

First Light
Last Light

0411
1616

0445
1540

(Prepared: 11 January 1982)

SITUATION CLIMATIC BRIEF

GREECE THE SOUTHERN ARCHIPELAGO*

DECEMBER - MARCH

1. GENERAL. The Mediterranean Sea moderates winter weather in the Southern Archipelago of Greece so that it is partly cloudy and mild with frequent precipitation. Mean cloud cover varies from 45-70 percent, but is usually 65 percent. Diurnal temperature variation is slight; mean minimums range from 45F to 55F and mean maximums are in the 50's and 60's. It rains on 10-20 days per month, but snows only rarely. Thunderstorms are infrequent. The island of Naxos gale force winds (28 knots or greater) up to 7 days per month, but, in general, winds of 25 knots or greater are rare.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-20 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, less than 2 percent. The worst flying conditions occur in conjunction with the fronts and migratory storms that traverse the region. They cause turbulence, rain showers, and aircraft icing. Occasionally, mountains are obscured by low ceilings and afternoon rain showers.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-10 days per month during the morning and on 10-15 days per month during the afternoon. Reduced visibilities due to fog, haze, or smoke, and extensive cloudiness at island stations, make reconnaissance difficult.

4. TERMINAL WEATHER. Iraklion, Greece. Fair. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time. The high frequency of rain showers and strong afternoon surface winds adversely affect conditions on 15 days of each month.

5. EXPOSURE WEATHER. The frequent rain and occasional strong winds make conditions slightly uncomfortable and restrict outdoor activities.

<u>IRAKLION, GREECE</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
<u>TEMPERATURE (F)</u>				
Absolute Maximum	80	76	82	100
Mean Maximum	64	60	60	64
Mean Minimum	51	48	48	50
Absolute Minimum	37	34	30	35
<u>MEAN PRECIPITATION (INCHES)</u>	3.6	3.4	2.8	1.8
<u>MEAN NUMBER OF DAYS</u>				
Precipitation	16	18	15	12
Snowfall	*	1	1	*
Thunderstorms	1	1	1	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Favorable paradrop conditions occur 30-75 percent of the time. Operations are most adversely affected by strong afternoon winds and rain showers.

* The Southern Archipelago consists of Crete and islands south of about 37°30'N.

7. ASTRONOMICAL DATA. Iraklion, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0452	0500	0440	0406
Last Light	1536	1557	1627	1652

(Prepared: 11 January 1982)

APRIL - MAY

1. GENERAL. Spring is a short transitional season best described as partly cloudy, mild, and windy with decreasing precipitation. Cloudiness decreases through the season with mean amounts of 30-55 percent. The Mediterranean Sea moderates mean daily temperatures; minimums range from 53F to 63F and maximums are in the 60's and 70's. The region exhibits considerable variability in frequency of precipitation with 5-10 such days on the Island of Crete and up to 5 days with rain elsewhere. Thunderstorms are rare. Except on the island of Naxos, where they occur on 2-6 days per month, gale force winds (28 knots or greater) are infrequent. However, the sirocco, a warm and dry southerly wind, sometimes approaches gale force and carries dust or fine sand from North Africa to much of the region.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, up to 3 percent. Migratory storms occasionally traverse the region, bringing turbulence and aircraft icing in addition to low ceilings and visibilities. Visibility at high altitudes is occasionally restricted by dust or sand, especially over extreme southern parts of the region. Navigation by ground reference is sometimes hampered by the extensive cloud development over mountains and ridges.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days each month. Haze, smoke, or fog reduces morning visibilities while extensive cloudiness is likely to affect afternoon operations. Early evenings are best for reconnaissance operations.

4. TERMINAL WEATHER. Iraklion, Greece. Good to fair. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time with early morning visibility reduction due to haze or fog causing most of these events. During April, frequent rain showers and occasional strong afternoon winds adversely affect terminal conditions.

5. EXPOSURE WEATHER. The general climate compares closely with northern California's with mostly mild and humid days and occasional, strong afternoon winds.

<u>IRAKLION, GREECE</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	98	100
Mean Maximum	70	76
Mean Minimum	54	60
Absolute Minimum	41	48
<u>MEAN PRECIPITATION (INCHES)</u>	1.1	0.9
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	8	6
Thunderstorms		1

* = less than 0.5 day

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrop operations 40-80 percent of the time. Strong winds and rain showers are the prime obstacles to operations during the afternoon.

7. ASTRONOMICAL DATA. Iraklion, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>
First Light	0322	0247
Last Light	1718	1744

(Prepared: 12 January 1982)

JUNE - SEPTEMBER

1. GENERAL. Summer is predominantly hot and dry with clear skies. Average cloud cover varies from 5-10 percent during July and August, but may average 25 percent during June and September. Mean daily minimum temperatures range from 65F to 75F. Maximums are in the 80's. Most of the region experiences 2 days of precipitation per month. The frequency of thunderstorms is extremely low. Strong winds such as the etesian and sirocco are characteristic of most island and coastal locations and reach gale force (28 knots or greater) up to 5 percent of the time.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 3-10 percent of the time at most locations, but 10-15 percent on some southeastern islands; less than 1500/3, 2-5 percent; and less than 500/1, up to 2 percent. Low ceilings and visibilities at a few southeastern islands during the morning occasionally make arrival/departure weather unfavorable, but these conditions seldom persist for long. Intense low-level turbulence is frequently encountered over the extreme southeastern portion of the region, but may occur to some degree at nearly all locations during the afternoon.

3. RECONNAISSANCE WEATHER. Good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 25-30 days per month. Afternoons are slightly better than mornings.

4. TERMINAL WEATHER. Iraklion, Greece. Good to fair. Ceiling/visibility less than 300/1 occurs up to 2 percent of the time. Runway crosswinds in excess of 15 knots occur 20 percent of the time during the afternoon.

5. EXPOSURE WEATHER. Afternoons are slightly uncomfortable due to the frequent hot and dry winds while mornings and evenings are quite comfortable.

<u>IRAKLION, GREECE</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)				
Absolute Maximum	114	106	104	102
Mean Maximum	82	85	85	82
Mean Minimum	67	72	71	68
Absolute Minimum	50	61	56	54
MEAN PRECIPITATION (INCHES)	0.1	*	0.3	0.7
MEAN NUMBER OF DAYS				
Precipitation	2	*	1	2

* = less than 0.05 inch or 0.5 day

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paratroops 30-80 percent of the time. Strong winds from midmorning to midafternoon are most likely to affect paratroop operations.

7. ASTRONOMICAL DATA. Iraklion, Greece. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0234	0246	0311	0336
Last Light	1805	1804	1736	1653

(Prepared: 11 January 1982)

OCTOBER - NOVEMBER

1. GENERAL. Autumn throughout much of the southern archipelago of Greece is partly cloudy and mild with frequent rainfall. Mean cloud cover varies from 35 to 60 percent. Average daily temperatures vary only slightly with minimums usually in the 60's (F) and maximums in the 70's. It rains on 5-15 days per month with the heaviest accumulations on the western slopes of islands and coastal regions. Thunderstorms occur with low frequency. Most locations report winds of 10-20 knots throughout the day while gale force winds (28 knots or greater) are primarily confined to the exposed islands southeast of Athens where they occur on 5 days per month. The sirocco, a warm and dry southerly wind, sometimes approaches gale force and carries dust or fine sand from North Africa.

2. FLYING WEATHER. Good to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500/3, 5-10 percent; and less than 500/1, 2-5 percent. Turbulence occurs at most locations and is regularly reported as severe over the Gulf of Corinth. Fronts occasionally traverse the region, causing brief periods of rain showers and associated low ceilings/visibilities.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days during October, but only on 6-15 days in November. Extensive cloud cover is the most pervasive cause of poor reconnaissance conditions.

4. TERMINAL WEATHER. Iraklion, Greece. Fair. Ceiling/visibility less than 300/1 occurs about 2 percent of the time. Crosswinds exceed 15 knots about 20 percent of the time, resulting in only fair takeoff/landing conditions.

5. EXPOSURE WEATHER. The region exhibits a northern California climate with mostly mild, humid, and windy daytime conditions.

<u>IRAKLION, GREECE</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>		
Absolute Maximum	96	87
Mean Maximum	77	71
Mean Minimum	62	56
Absolute Minimum	45	37
<u>MEAN PRECIPITATION (INCHES)</u>	1.5	3.9
<u>MEAN NUMBER OF DAYS</u>		
Precipitation	7	10
Thunderstorms	1	1

6. PARADROP WEATHER. Fair. Favorable paradrop conditions occur 55-75 percent of the time. Winds in excess of 13 knots and rain showers, especially in the afternoons, comprise the prime obstacles to paradrop operations.

7. ASTRONOMICAL DATA. Iraklion, Greece. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

OCT

NOV

First Light

0359

0427

Last Light

1610

1540

(Prepared: 9 May 1981)

SITUATION CLIMATIC BRIEF

HUNGARY

DECEMBER - FEBRUARY

1. GENERAL. Winter is cold, cloudy, and damp with frequent light rain or snow. Mean daily minimum temperatures are in the 20's and 30's (F). Maximums are in the 30's and 40's. Mean cloudiness varies from 60 to 80 percent. February is the least cloudy month. Precipitation occurs on 8-15 days per month. Thunderstorms are rare. Gale force winds (28 knots or greater) are infrequent.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-90 percent of the time; less than 1500/3, 20-65 percent; and less than 500/1, up to 30 percent of the time. Periods of clear weather of several days duration occasionally occur. Aircraft icing and turbulence occur in the dense clouds.

3. RECONNAISSANCE WEATHER. Very poor due to dense cloudiness and low visibility. Sky cover of 2/8 or less and visibility of 3 miles or greater occur only 1-12 days per month.

4. TERMINAL WEATHER. Budapest, Hungary. Poor. Ceiling/visibility less than 1500/3 occurs up to 50 percent of the time; and less than 300/1, up to 30 percent. Conditions are poorest during the afternoon due to industrial pollutants.

5. EXPOSURE WEATHER. Cold, damp, and foggy.

<u>BUDAPEST, HUNGARY</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	60	59	64
Mean Maximum	38	35	40
Mean Minimum	31	26	28
Absolute Minimum	-2	-7	-10
<u>MEAN PRECIPITATION (INCHES)</u>	2.0	1.5	1.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	15	13	11
Snowfall	6	7	5
Thunderstorms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Poor to fair due to low ceilings and visibilities. Conditions are favorable for paradrops 30-70 percent of the time.

7. ASTRONOMICAL DATA. Budapest, Hungary. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0648	0650	0618
Last Light	1628	1653	1736

(Prepared: 9 May 1981)

MARCH - MAY

1. GENERAL. Spring months are characterized by decreasing cloudiness, moderating temperatures, and increasing precipitation. Mean cloudiness decreases from 50-70 percent in March to 45-65 percent in May. Mean daily minimum temperatures increase from the 30's (F) in March to the upper 40's and lower 50's in May. Maximum temperatures increase from the 40's and 50's to the upper 60's and lower 70's. Precipitation occurs on 10-13 days per month as rain or snow in March and mainly rain showers in May. Thunderstorms become increasingly common by May. Gale force winds (28 knots or greater) are infrequent.

2. FLYING WEATHER. Fair to poor in March becoming generally good in May. Low ceilings and visibilities are common in March. Ceiling/visibility less than 500 feet and/or 6 miles occurs in March up to 70 percent of the time; less than 1500/3, up to 35 percent; and less than 500/1 up to 10 percent of the time. Conditions improve through May. Icing and turbulence are a threat in the clouds around storm systems.

3. RECONNAISSANCE WEATHER. Fair at night, but generally poor during daylight hours. Sky cover of 2/8 or less and visibility 3 miles or greater occur 3-17 days per month.

4. TERMINAL WEATHER. Budapest, Hungary. Fair to good. Visibilities are lowest during the afternoon due to industrial pollutants. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time.

5. EXPOSURE WEATHER. Chilly, cloudy, and damp in March becoming warm and pleasant in May.

<u>BUDAPEST, HUNGARY</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	78	86	90
Mean Maximum	51	62	72
Mean Minimum	36	44	52
Absolute Minimum	5	24	32
MEAN PRECIPITATION (INCHES)	1.7	2.0	2.7
MEAN NUMBER OF DAYS			
Precipitation	12	12	13
Snowfall	3	1	*
Thunderstorms	0	1	4

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-70 percent of the time.

7. ASTRONOMICAL DATA. Budapest, Hungary. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0528	0422	0329
Last Light	1818	1905	1950

(Prepared: 9 May 1981)

JUNE - AUGUST

1. GENERAL. Summer months are partly cloudy with occasional rain showers or thunderstorms. Mean cloudiness ranges from 35 to 60 percent. Precipitation occurs on 8-12 days per month with the highest frequencies in June. Thunderstorms occur on 1-8 days per month. Afternoons are hot and nights are cool. Mean daily minimum temperatures are in the 50's and 60's (F). Maximums are in the 70's and 80's. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs about 20 percent of the time; less than 1500/3, 10 percent; and less than 500/1, less than 5 percent.

3. RECONNAISSANCE WEATHER. Poor to fair during the afternoon due to cloud cover; fair to good otherwise. Afternoon sky cover of 2/8 or less and visibility of 3 miles or greater occur 2-17 days per month improving to 12-22 days at night.

4. TERMINAL WEATHER. Budapest, Hungary. Good. The terminal experiences an occasional afternoon rain shower or thunderstorm and infrequent morning fog. Ceiling/visibility less than 300/1 occurs about 1 percent of the time.

5. EXPOSURE WEATHER. Warm to hot days, cool nights with occasional rain showers.

<u>BUDAPEST, HUNGARY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	103	101	102
Mean Maximum	78	82	81
Mean Minimum	57	67	59
Absolute Minimum	37	48	45
MEAN PRECIPITATION (INCHES)	2.6	2.0	1.9
MEAN NUMBER OF DAYS			
Precipitation	11	10	7
Thunderstorms	5	3	3

6. PARADROP WEATHER. Generally good. Conditions are favorable for paradrrops 70-80 percent of the time.

7. ASTRONOMICAL DATA. Budapest, Hungary. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0305	0322	0405
Last Light	2022	2015	1930

(Prepared: 9 May 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn months in Hungary are marked by increasing cloudiness, rapidly falling temperatures, and a moderate increase in precipitation. Mean cloudiness increases from 40-55 percent in September to 60-75 percent in November. Mean daily minimum temperatures decrease from the 40's and 50's (F) in September to the 30's in November. Maximums decrease from the 60's and 70's in September to the 40's in November. Rain showers occur on 8-13 days per month in

September changing to light rain or snow by November. Thunderstorms occur on 1-13 days in September becoming infrequent thereafter. Gale force winds are rare.

2. FLYING WEATHER. Good in September. Poor by November due to the dense cloudiness, icing, and turbulence common around storm systems. In November, the worst month, ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 60 percent of the time; less than 1500/3, up to 40 percent; and less than 500/1, up to 30 percent of the time.

3. RECONNAISSANCE WEATHER. Fair to good in September. Poor by November. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 8-21 days in September and less than 10 days in November.

4. TERMINAL WEATHER. Budapest, Hungary. Good in September. Fair to poor by November due to low ceilings and visibilities. Ceiling/visibility less than 500/1 occurs up to 25 percent of the time.

5. EXPOSURE WEATHER. Warm and pleasant in September becoming chilly, cloudy, and damp by November.

<u>BUDAPEST, HUNGARY</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	95	87	72
Mean Maximum	74	61	47
Mean Minimum	53	45	37
Absolute Minimum	34	15	8
MEAN PRECIPITATION (INCHES)	1.8	2.1	2.4
MEAN NUMBER OF DAYS			
Precipitation	9	11	13
Snowfall	0	*	2
Thunderstorms	1	*	0

* = less than 0.5 day

6. PARADROP WEATHER. Good in September. Fair to poor in November due to low ceilings and visibilities. Conditions are favorable for paratroops about 75 percent of the time in September, but gradually decrease to 40-60 percent of the time in November.

7. ASTRONOMICAL DATA. Budapest, Hungary. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0449	0532	0616
Last Light	1827	1725	1640

(Prepared: 30 November 1981)

SITUATION CLIMATIC BRIEF

ITALY

DECEMBER - FEBRUARY

1. GENERAL. Winter is mostly cloudy and mild with moderate precipitation. Mean cloudiness varies from 45-70 percent. Mean daily minimum temperatures range from the teens in the Alps to the 50's (F) in the south. Mean daily maximum temperatures range from the 30's in the Alps to the mid 50's in the south. Precipitation generally accompanies migrating storm systems bringing snow to the higher elevations and rain elsewhere. Precipitation occurs on 6-16 days per month. Gale force winds (28 knots or greater) occur 5 percent of the time or less. Thunderstorms are rare.

2. FLYING WEATHER. Good. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 20-40 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 3 percent or less. Throughout Italy there is a tendency for all cloud bases to lift about noon or early afternoon. Turbulence is frequently found in the mountainous regions in association with frontal passages.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on 7-15 days per month. Fog in the northern areas is the primary restriction to visibility.

4. TERMINAL WEATHER. Rome, Italy. Good. Ceilings less than 300 feet and/or visibilities less than 1 mile occur less than 1 percent of the time.

5. EXPOSURE WEATHER. The winter climate poses few serious problems to either personnel or equipment.

<u>ROME, ITALY</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	70	65	68
Mean Maximum	53	52	55
Mean Minimum	40	39	40
Absolute Minimum	21	19	17
MEAN PRECIPITATION (INCHES)	3.9	3.3	2.6
MEAN NUMBER OF DAYS			
Precipitation	12	11	9
Snowfall	*	1	*
Thunderstorms	1	1	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Favorable conditions occur 40-65 percent of the time. An exception is the Po Valley, where conditions are favorable only 15-35 percent of the time.

7. ASTRONOMICAL DATA. Rome, Italy. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0559	0604	0537
Last Light	1610	1632	1709

(Prepared: 17 December 1981)

MARCH - MAY

1. GENERAL. Spring is partly cloudy and mild. Mean cloudiness is 55-75 percent. Mean maximum temperatures range from the 50's (F) in March to the 70's in May. Mean minimum temperatures range from 30F to 45F in March to the 50's in May. Precipitation falls on 7-12 days per month. Mean monthly amounts are 2.5-3.5 inches, except the Italian Alps, where up to 11 inches per month is reported. Occasional showers and thunderstorms occur in central and southern Italy while northern Italy experiences frequent showers and occasionally subfreezing temperatures. Thunderstorms can be expected on 1-2 days in March and April and up to 6 days in May. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair to good. Conditions in the south are normally superior to those in the mountainous regions of the north. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 20-40 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, 10 percent or less. Thunderstorms occur on 1-2 days in March and April and up to 6 days in May. Turbulence is found in the mountainous areas in association with frontal passages.

3. RECONNAISSANCE WEATHER. Poor. Total cloud cover of 2/8 or less and visibility 3 miles or greater occurs on 10 days per month or less.

4. TERMINAL WEATHER. Rome, Italy. Fair. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 5 percent of the time or less. One or two thunderstorms per month can be expected.

5. EXPOSURE WEATHER. Except for periods of showers or thunderstorms, the spring climate poses little threat to outdoor activities in central and southern locations. Precautions must be taken in northern areas due to low temperatures and persistent shower activity.

<u>ROME, ITALY</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	74	83	90
Mean Maximum	59	65	73
Mean Minimum	44	49	55
Absolute Minimum	25	27	38
MEAN PRECIPITATION (INCHES)	2.9	2.6	2.2
MEAN NUMBER OF DAYS			
Precipitation	11	12	9
Thunderstorms	1	1	2

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60-80 percent of the time.

7. ASTRONOMICAL DATA. Rome, Italy. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0454	0358	0318
Last Light	1743	1820	1853

(Prepared: 16 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is warm and sunny with occasional showers or thunderstorms. Mean cloudiness ranges from 30 to 60 percent. Mean daily maximum temperatures typically exceed 80F except in the mountainous areas. Mean minimum temperatures range from 55F to 70F. Precipitation occurs on 5-12 days per month with monthly amounts generally averaging 1-3 inches. An exception is the Italian Alps region where up to 9 inches of rain is received each month. Thunderstorms occur on 4-8 days in the Alps and the Po Valley, 2-5 days per month elsewhere. The dry sirocco, a persistent dust-laden wind, is associated with gale force winds (28 knots or greater) occurring about 5 percent of the time in southern Italy.

2. FLYING WEATHER. Generally good. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 20-40 percent of the time; less than 1500/3, 5-15 percent; and less than 500 feet and/or 1 mile occur less than 2 percent. Turbulence can be found over the mountainous regions of northern Italy during thunderstorm activity and extremely hot weather conditions.

3. RECONNAISSANCE WEATHER. Fair to good. Total cloud cover of 2/8 or less and visibility 3 miles or greater occurs on 10-20 days per month.

4. TERMINAL WEATHER. Rome, Italy. Good. The principle restriction is precipitation caused by afternoon thunderstorms which occur on 2-3 days per month. Ceilings less than 300 feet and/or visibilities less than 1 mile occur less than 1 percent of the time.

5. EXPOSURE WEATHER. Afternoon thunderstorms with accompanying strong, gusty winds and heavy showers may hinder outdoor activities.

<u>ROME, ITALY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	97	108	99
Mean Maximum	81	87	86
Mean Minimum	61	66	65
Absolute Minimum	48	52	52
MEAN PRECIPITATION (INCHES)	1.5	0.7	1.0
MEAN NUMBER OF DAYS			
Precipitation	6	2	3
Thunderstorms	3	2	3

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops over 70 percent of the time in most areas.

7. ASTRONOMICAL DATA. Rome, Italy. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0258	0311	0345
Last Light	1921	1918	1841

(Prepared: 30 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is generally partly cloudy and warm with occasional showers or thunderstorms. Frontal passages may be accompanied by low ceilings and visibilities and high winds, but these conditions only last from 1-2 hours depending

on the intensity of the system. Mean daily maximum temperatures decrease from the 80's (F) in September to the 50's and 60's by November while mean minimum temperatures fall from the mid 60's to near 40 degrees. Precipitation caused mainly by migratory storms occurs on 6-12 days per month. Mean monthly amounts range from 2.2-5.0 inches. Thunderstorm activity occurs on 1-3 days a month. Gale force winds (28 knots or greater) occur less than 2 percent of the time. Radiation fog exhibiting diurnal variations is quite common on the mountain slopes of the Alps and Apennines in the north.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 15-30 percent of the time; less than 1500/3, 10 percent; and less than 500/1, 2 percent or less. Thunderstorms can be expected on 1-3 days per month.

3. RECONNAISSANCE WEATHER. Poor over the Po Valley, otherwise fair. Total cloud cover 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month in the Po Valley, 7-15 days per month elsewhere.

4. TERMINAL WEATHER. Rome, Italy. Good. Ceiling less than 300 feet and/or visibilities less than 1 mile occur less than 1 percent of the time.

5. EXPOSURE WEATHER. Frontal passages and thunderstorms may produce strong localized winds and heavy rain showers which would hamper outdoor activity.

<u>ROME, ITALY</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	93	90	76
Mean Maximum	80	70	60
Mean Minimum	61	55	46
Absolute Minimum	43	32	26
<u>MEAN PRECIPITATION (INCHES)</u>	2.5	5.0	4.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	6	12	12
Thunderstorms	3	3	2

6. PARADROP WEATHER. Fair. Conditions are favorable 60-75 percent of the time in most areas. An exception is the Po Valley, where conditions are favorable only 25-50 percent of the time.

7. ASTRONOMICAL DATA. Rome, Italy. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0421	0451	0528
Last Light	1747	1659	1619

(Prepared: 27 November 1981)

SITUATION CLIMATIC BRIEF

LUXEMBOURG

DECEMBER - FEBRUARY

1. GENERAL. Winter in Luxembourg is cloudy and humid with cold temperatures. Mean cloudiness is from 50-85 percent or higher throughout the season. Mean maximum temperatures range from 35F to 40F, mean minimums from 26F to 37F. Precipitation falls on 12-20 days per month with monthly amounts of 2-4 inches. Gale force winds and thunderstorms are infrequent.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 75-95 percent of the time; less than 1500/3, 50-75 percent; and less than 500/1, 15-30 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 7 days per month.

4. TERMINAL WEATHER. Luxembourg, Luxembourg. Poor. Ceilings less than 300 feet and/or visibility less than 1 mile occurs 15-30 percent of the time.

5. EXPOSURE WEATHER. High humidity and cool temperatures precipitation can make outdoor activities difficult.

<u>LUXEMBOURG, LUXEMBOURG</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	58	57	63
Mean Maximum	39	37	40
Mean Minimum	33	29	29
Absolute Minimum	-8	-10	-7
MEAN PRECIPITATION (INCHES)	2.9	2.4	2.2
MEAN NUMBER OF DAYS			
Precipitation	17	16	14
Snowfall	5	10	7
Thunderstorms	*	*	*
Fog	8	5	4

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrops less than 40 percent of the time.

7. ASTRONOMICAL DATA. Luxembourg, Luxembourg. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0747	0750	0713
Last Light	1713	1739	1827

(Prepared: 30 November 1981)

MARCH - MAY

1. GENERAL. Spring in Luxembourg is cloudy and humid with frequent precipitation. Mean cloudiness ranges from 50-70 percent. Mean maximum temperatures range from 50F to 65F; minimums from 32F to 48F. Relative humidity varies from 85 percent at midmorning to 60 percent at noon. Precipitation occurs on 10-14 days per month; monthly amounts are 1.6-3.0 inches. Thunderstorms occur infrequently in March and April but can be expected on about 3 days during May. Gale force winds are infrequent.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 35-50 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1, 5-15 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on 10 days per month or less. The hours near midnight (LST) are best, noon is the least favorable time.

4. TERMINAL WEATHER. Luxembourg, Luxembourg. Fair. Conditions less than 300 feet and/or 1 mile occur about 5 percent of time.

5. EXPOSURE WEATHER. High humidity and frequent precipitation can make outdoor work difficult.

<u>LUXEMBOURG, LUXEMBOURG</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	73	85	91
Mean Maximum	50	57	65
Mean Minimum	34	40	46
Absolute Minimum	7	21	26
MEAN PRECIPITATION (INCHES)	2.0	2.3	2.6
MEAN NUMBER OF DAYS			
Precipitation	13	14	14
Snowfall	4	1	*
Thunderstorms	*	1	3
Fog	4	1	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable 45-75 percent of the time.

7. ASTRONOMICAL WEATHER. Luxembourg, Luxembourg. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0618	0510	0413
Last Light	1911	2001	2051

(Prepared: 30 November 1981)

JUNE - AUGUST

1. GENERAL. Summer in Luxembourg is cloudy and humid with mild temperatures and frequent precipitation. Mean cloudiness is 50-70 percent. Mean daily maximum temperatures range from 65F to 80F, mean minimums from 45F to 55F. Precipitation

falls on 12-16 days per month with most stations recording 2.5-3.5 inches per month. Relative humidity is 80-90 percent at midmorning and 55-65 percent at noon. Thunderstorms occur on 3-4 days per month. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 35-55 percent of the time; less than 1500/3, 30-45 percent of the time near sunrise but only 5-15 percent during other hours; and less than 500/1, 7 percent of the time or less.

3. RECONNAISSANCE WEATHER. Poor. The hours near midnight (LST) are most favorable, with 12-15 days per month having less than 2/8 cloud cover and 3 miles or greater visibility at 00L. However, favorable weather occurs on only 8 days or less during other hours.

4. TERMINAL WEATHER. Luxembourg, Luxembourg. Generally fair. The hours near sunrise are poor, due to frequent haze, fog, and low cloudiness. This condition usually clears soon after sunrise. Ceiling/visibility less than 300 feet and/or 1 mile occurs up to 13 percent of the time at 06-08 LST but only up to 3 percent at other hours. Thunderstorms can be expected on 3-4 days per month.

5. EXPOSURE WEATHER. High humidity and frequent precipitation can cause poor conditions for working outdoors.

<u>LUXEMBOURG, LUXEMBOURG</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	88	93	90
Mean Maximum	67	71	70
Mean Minimum	51	54	54
Absolute Minimum	37	39	43
MEAN PRECIPITATION (INCHES)	2.7	2.8	3.6
MEAN NUMBER OF DAYS			
Precipitation	14	13	14
Thunderstorms	4	3	3
Fog	2	1	4

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 60 percent of the time or more.

7. ASTRONOMICAL BRIEF. Luxembourg, Luxembourg. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0343	0402	0449
Last Light	2128	2119	2029

(Prepared: 30 November 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is cloudy and cool with frequent precipitation. Mean cloudiness ranges from 60-85 percent. Mean daily maximum temperatures range from the mid 60s (F) in September to the mid 40s in November. Mean daily minimums range from the upper 40s in September to the mid 30s in November. Precipitation occurs on 10-18 days per month with mean monthly amounts from 2-3 inches at most stations. Relative humidity is high, averaging over 90 percent at 06L and 65-85 percent at 12L. Thunderstorms and gale force winds are infrequent.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 60-80 percent of the time; less than 1500/3, 30-65 percent; and less than 500/1, up to 30 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Luxembourg, Luxembourg. Poor. There is frequent and persistent fog, haze, and low cloud, especially during early and midmorning hours. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 20-30 percent of the time between 06-08 LST, and up to 15 percent of the time at other hours.

5. EXPOSURE WEATHER. Cool temperatures, high humidity, and frequent precipitation can make outdoor work difficult.

<u>LUXEMBOURG, LUXEMBOURG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	86	70	64
Mean Maximum	64	55	44
Mean Minimum	50	43	36
Absolute Minimum	34	25	21
MEAN PRECIPITATION (INCHES)	2.9	2.4	3.1
MEAN NUMBER OF DAYS			
Precipitation	13	14	16
Snowfall	0	*	2
Thunderstorms	1	*	*
Fog	5	8	6

* = less than 0.5 day

6. PARADROP WEATHER. Generally fair. Favorable conditions occur only 40 percent of the time between 06-12 LST, but other hours see favorable conditions 60-80 percent of the time.

7. ASTRONOMICAL DATA. Luxembourg, Luxembourg. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0538	0623	0711
Last Light	1922	1818	1728

(Prepared: 24 November 1981)

SITUATION CLIMATIC BRIEF

NETHERLANDS

DECEMBER - FEBRUARY

1. GENERAL. Winters are cloudy and humid with cold temperatures and frequent precipitation. Mean cloudiness is 70-85 percent. Mean daily maximum temperatures are near 40F, mean minimums are near freezing. Mean relative humidity is 80-90 percent. Precipitation falls on 15-20 days per month with mean monthly amounts decreasing from 2.6 inches in December to 1.7 inches in February. Snow is reported on 3-4 days per month, the remainder of the precipitation falls as light rain or drizzle. Thunderstorms are rare in winter. Mean wind speeds are relatively high; along the coast they average 14 knots, and exceed gale force (28 knots or greater) 10-15 percent of the time. Winds are lighter over the interior, averaging 9 knots, and exceeding gale force less than 3 percent of the time.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 65-80 percent of the time; less than 1500/3, 35-55 percent; and less than 500/1, 15-25 percent. Surface winds reach gale force (28 knots or greater) 10-15 percent of the time over coastal areas, so that low-level turbulence is a frequent hazard.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Schiphol (Amsterdam), Netherlands. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 15-23 percent of the time. Runway crosswinds (runway 087-267 true) exceed 25 knots about 3 percent of the time.

5. EXPOSURE WEATHER. The combination of high humidity, frequent precipitation, strong winds, and temperatures near or below freezing make working outdoors difficult.

<u>SCHIPHOL (AMSTERDAM), NETHERLANDS</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	57	55	61
Mean Maximum	41	40	41
Mean Minimum	35	34	34
Absolute Minimum	6	3	-4
<u>MEAN PRECIPITATION (INCHES)</u>	2.2	2.0	1.4
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	19	19	15
Snowfall	4	4	4
Thunderstorms	1	*	*
Fog	11	10	6

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrops less than 40 percent of the time.

7. ASTRONOMICAL DATA. Schiphol (Amsterdam), Netherlands. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0803	0804	0722
Last Light	1709	1737	1829

(Prepared: 25 November 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy and humid with frequent precipitation. Mean cloudiness is 60-75 percent. Mean daily maximum temperatures reach only the mid 40's (F) in March but approach 60F during May. Mean daily minimum temperatures range from the mid 30's in March to the low 50's in May. Relative humidity averages 70-80 percent. Precipitation falls on 12-18 days per month, with mean monthly amounts of 1.5-2.5 inches. Surface winds are fairly strong, averaging 11-14 knots on the coast and 7-9 knots inland. Gale force winds (28 knots or greater) occur 3-4 percent of the time along the coast and up to 2 percent inland. Thunderstorms occur on 1-3 days per month.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 40-70 percent of the time; less than 1500/3, 25-50 percent; and less than 500/1, up to 20 percent of the time. Low-level turbulence is a frequent hazard, especially over coastal areas.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Schiphol (Amsterdam), Netherlands. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur up to 20 percent of the time, most frequently during the early morning.

5. EXPOSURE WEATHER. Working outdoors can be difficult because of frequent precipitation, high humidity, and strong gusty winds.

<u>SCHIPHOL (AMSTERDAM), NETHERLANDS</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	66	77	88
Mean Maximum	46	52	60
Mean Minimum	37	43	50
Absolute Minimum	15	27	30
MEAN PRECIPITATION (INCHES)	1.3	1.6	1.8
MEAN NUMBER OF DAYS			
Precipitation	13	14	12
Snowfall	4	1	0
Thunderstorms	1	2	3
Fog	6	1	1

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 35-60 percent of the time. Late night hours are most favorable, early afternoon hours are the least favorable.

7. ASTRONOMICAL DATA. Schiphol (Amsterdam), Netherlands. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0623	0509	0404
Last Light	1918	2015	2112

(Prepared: 25 November 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy and humid with mild temperatures and frequent precipitation. Mean cloudiness is 50-70 percent. Mean maximum temperatures range from 65F to 75F; mean minimums from 48F to 58F. Relative humidity is 70-80 percent. Precipitation falls on 12-17 days per month, monthly totals are 1.7-3.5 inches. Gale force winds (28 knots or greater) occur up to 3 percent of the time. Thunderstorms occur on 4-5 days per month.

2. FLYING WEATHER. Fair. There is frequent and persistent cloud cover, often with imbedded thunderstorms. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 35-50 percent of the time; less than 1500/3, 20-35 percent; and less than 500/1, up to 10 percent. Low-level turbulence is a frequent hazard caused by thunderstorms and/or strong low-level winds.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Schiphol (Amsterdam), Netherlands. Fair. Ceilings less than 300 feet and/or visibilities less than 1 mile occur 5-7 percent of the time. Runway crosswinds (runway 070-250 true) exceed 25 knots about 1 percent of the time. Thunderstorms are reported on 5 days per month during summer.

5. EXPOSURE WEATHER. Outdoor work can be hampered by frequent precipitation, strong gusty winds and high humidity.

<u>SCHIPHOL (AMSTERDAM), NETHERLANDS</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	95	91	90
Mean Maximum	65	69	68
Mean Minimum	55	59	59
Absolute Minimum	39	43	43
MEAN PRECIPITATION (INCHES)	1.8	2.6	2.7
MEAN NUMBER OF DAYS			
Precipitation	12	14	14
Thunderstorms	4	5	5
Fog	0	0	1

6. PARADROP WEATHER. Fair. The weather is favorable for paradrops 40-75 percent of the time during the evening and early morning but only 35-55 percent of the time during late morning-afternoon hours.

7. ASTRONOMICAL DATA. Schiphol (Amsterdam), Netherlands. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0329	0358	0444
Last Light	2156	2135	2045

(Prepared: 25 November 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is cloudy and humid with mild temperatures and frequent precipitation. Mean cloudiness is 55-80 percent. Mean maximum temperatures decrease from the mid 60's (F) in September to the mid 40's during November. Mean minimums are in the high 40's in September but reach only the lower 30's in November. Relative humidity is 70 percent or higher. Surface winds are strong, and exceed 27 knots about 1-2 percent of the time at inland stations and as much as 10 percent of the time along the coast. Thunderstorms occur on up to 4 days per month.

2. FLYING WEATHER. Poor. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 50-75 of the time; less than 1500/3, 20-40 percent; and less than 500/1, up to 25 percent. Thunderstorms occur up to 4 days per month. Low-level turbulence occurs frequently, especially over coastal areas.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Schiphol (Amsterdam), Netherlands. Poor. Ceilings less than 300 feet and/or visibilities less than 1 mile occur up to 23 percent of the time. Runway crosswinds exceed 25 knots 3-5 percent of the time. Thunderstorms occur on 4 days in September, 1-2 days in October and November.

5. EXPOSURE WEATHER. The combination of strong gusty winds, frequent precipitation, and high humidity can make outdoor activities difficult.

<u>SCHIPHOL (AMSTERDAM), NETHERLANDS</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	91	77	63
Mean Maximum	64	56	47
Mean Minimum	56	48	41
Absolute Minimum	39	27	16
MEAN PRECIPITATION (INCHES)	2.8	2.8	2.6
MEAN NUMBER OF DAYS			
Precipitation	15	18	19
Snowfall	0	0	2
Thunderstorms	4	2	1
Fog	1	3	7

* = less than 0.5 day

6. PARADROP WEATHER. Fair. The frequency of favorable weather ranges from as high as 65 percent during the late evening to as low as 35 percent during the early afternoon.

7. ASTRONOMICAL DATA. Schiphol (Amsterdam), Netherlands. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0540	0631	0723
Last Light	1931	1822	1727

SITUATION CLIMATIC BRIEF

NORWAY

SEPTEMBER - FEBRUARY

1. GENERAL. The autumn and winter climate along the coast and the exposed slopes of Norway are characterized by relatively mild temperatures for its latitude, extensive cloudiness, and frequent rain or snow squalls. Interior Norway, due to the shielding effect of the mountains, has lower temperatures, less cloudiness and precipitation than the coastal strip. Throughout Norway, mean cloudiness ranges from 60 to 80 percent. Precipitation occurs on an average of 10-24 days per month. Most of the precipitation occurs as snow with the heaviest occurring along the west-facing mountain slopes of the south. Mean precipitation amounts range from as little as 0.5 to 2 inches per month at northern interior regions to as much as 9 to 12 inches at southwestern coastal areas. Mean high temperatures in January, the coldest month, range from 32-35 (F) at southern coastal areas to 10-25 at Arctic interior locations and higher terrain of the interior south. Mean lows range from 20-32 at southern coast areas to blow zero at northern regions and the higher terrain of the south. Visibility is generally fair with fog being the frequent cause of visibility restrictions. Heavy rain, snow, and blowing snow also restrict the visibility at times, as do haze and smoke in populated valleys in winter. The strongest surface wind speeds, which average about 20 knots, occur at exposed western and southwestern coastal regions where gale force winds occur as often as 15 percent of the time in winter. Gusty winds of gale force or greater also occur with the elvegust, a cold offshore wind which occurs without warning in the upper parts of the Norwegian fiords.

2. FLYING WEATHER. Generally poor, particularly at western and southwestern coastal regions and over windward-facing mountains and ridges, which are frequently obscured by clouds. Fair conditions may be experienced at central and southeastern lowland interior localities during late afternoon and evening hours. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-70 percent of the time; 1500/3, 15-55 percent; and 500/1, 5-30 percent. Thunderstorms are rare, except at southernmost locales where they occur on 2 days per month or less during autumn. Turbulence is a frequent flying hazard which extends as high as 30,000 feet at west coast regions and over west-facing slopes. Conditions at low levels are generally favorable for aircraft icing, particularly along westward-facing slopes where icing may be severe.

3. RECONNAISSANCE WEATHER. Poor due to widespread cloudiness that prevails throughout most of the country. However, fair conditions can occur at central and southeastern interior localities during the evening and late night hours. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 1-11 days per month.

4. TERMINAL WEATHER. Oslo, Norway. Cloudy skies and frequent precipitation falling mainly as snow from December to February. Low ceilings and/or visibilities frequently occur between 0300-1500 LST, particularly in November to February. Ceilings or visibilities less than 300/1 occur 5-25 percent of the time. Crosswinds greater than 15 knots can be expected 1-4 percent of the time.

5. EXPOSURE WEATHER. Oslo, Norway. Comfortably mild temperatures and frequent rainfall in early autumn. Cold temperatures and frequent snowfall during the winter months. Surface wind speeds of 17 knots or greater can be expected 1-5 percent of the time.

<u>OLSO, NORWAY</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)						
Absolute Maximum	78	74	58	55	54	59
Mean Maximum	60	49	37	31	30	32
Mean Minimum	45	37	29	24	20	20
Absolute Minimum	25	7	0	-26	-2	-13
MEAN PRECIPITATION (INCHES)	2.4	2.6	2.0	1.9	1.6	1.5
MEAN NUMBER OF DAYS						
Precipitation	11	13	13	15	13	11
Snowfall	*	2	6	12	3	11
Thunderstorms	1	*	*	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. The least favorable conditions occur at western coastal regions, where conditions are suitable 20-50 percent of the time in autumn and decrease to 10-20 percent in winter. Elsewhere conditions are suitable 40-80 percent of the time, with evening and late night hours being the most favorable.

7. ASTRONOMICAL DATA. Oslo, Norway. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0501	0614	0728	0817	0811	1713
Last Light	1920	1748	1634	1606	1638	1748

(Prepared: 18 March 1980)

MARCH - AUGUST

1. GENERAL. Norway's climate is characterized by cloudy skies with frequent precipitation and is very mild for its latitude. Mean cloudiness ranges from 55 to 75 percent. The maximum cloudiness and precipitation occur in early spring and late summer, particularly in west and southwest regions and on windward slopes. Precipitation occurs on 10-21 days per month, with significant snowfall amounts occurring as late as May on the mountains of the southern interior and along the Arctic coastal regions. Mean precipitation amounts range from 0.5 to 3 inches at Arctic regions to 2 to 8 inches at southwestern locales. March daytime high temperatures range from the mid to upper teens (F) over the Arctic interior and the higher terrain of the south to the 30's and 40's elsewhere. By July, the warmest month, temperatures warm up to the 40's in the north to the low 70's over southern locales. Mean lows from spring to summer range, at Arctic interior regions, from below zero to near freezing and at southern regions from the upper 20's and 30's to the lower 50's. Visibility is generally fair, with fog being the major restriction, particularly in summer along coastal regions and on windward-facing mountains and ridges. Surface winds are light at sheltered interior locales and stronger at coastal regions where afternoon mean speeds are 10-15 knots. Frequent gale force winds occur at western and southwestern coastal areas, particularly in early spring.

2. FLYING WEATHER. Poor in early spring and late summer to fair in mid summer. The least favorable conditions occur at western and southern coastal locales and over west-facing ridges especially during the morning and early afternoon hours. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 25-50 percent of the time; 1500 feet/3 miles, 5-40 percent; and 500/1, 1-20 percent. Thunderstorms are rare, except at southern locations where they occur on 1-6 days per month in late spring and summer. Turbulence is a hazard which occurs at exposed windy coastal regions and near mountainous terrain.

3. RECONNAISSANCE WEATHER. Generally poor except that fair conditions occur in the late afternoon and evening hours at southern interior locations from March to May. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 2-11 days per month.

4. TERMINAL WEATHER. Oslo, Norway. Low ceilings or visibilities occur at this location most often between 0300-1100 LST in the spring and late summer. Ceiling/visibility less than 300/1 occurs 2-13 percent of the time. Thunderstorms occur on 3-6 days per month in summer and are rare in spring; crosswinds greater than 15 knots, as often as 5 percent during May afternoons, otherwise they occur 2 percent of the time or less.

5. EXPOSURE WEATHER. Spring conditions are moderately cold with snow occurring as late as May. Summers are comfortably mild with frequent rainfall.

<u>OSLO, NORWAY</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	64	77	86	93	95	91
Mean Maximum	40	50	62	69	73	69
Mean Minimum	25	34	43	51	56	53
Absolute Minimum	-6	3	25	33	40	36
MEAN PRECIPITATION (INCHES)	1.5	1.6	1.7	2.1	3.0	3.5
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	12	10	11	11	13	16
Snowfall	11	5	1	0	0	0
Thunderstorms	0	0	1	3	6	4

6. PRARDROP WEATHER. Least favorable at western localities 85 percent of the time during early spring mornings; otherwise, unfavorable 15-70 percent due to winds in excess of 13 knots during late morning and afternoon.

7. ASTRONOMICAL DATA. Oslo, Norway. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0555	0411	0231	0100	0158	0337
Last Light	1857	2021	2153	2332	2245	2102

(Prepared: 9 June 1981)

SITUATION CLIMATIC BRIEF

POLAND

DECEMBER - FEBRUARY

1. GENERAL. Winters are cold, cloudy, and snowy. Mean daily minimum temperatures range from 11F to 32F. Maximums range from 19F to 40F. Mean cloudiness varies from 65 to 80 percent. Precipitation occurs mostly as snow. Gale force winds (28 knots or greater) are common in the southern mountains.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 80 percent of the time in January; less than 1500/3, up to 50 percent; and less than 500/1, up to 30 percent of the time.

3. RECONNAISSANCE WEATHER. Generally poor due to heavy cloud cover and low visibility. Sky cover of 2/8 or less and visibility of 3 miles or greater occur less than 10 days per month.

4. TERMINAL WEATHER. Warsaw, Poland. Generally poor with frequent low ceilings and visibilities. Ceiling/visibility less than 300/1 occurs up to 30 percent of the time.

5. EXPOSURE WEATHER. Cold with frequent snowfall. Temperatures as low as -20F are not uncommon.

<u>WARSAW, POLAND</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	60	50	54
Mean Maximum	32	30	32
Mean Minimum	25	21	23
Absolute Minimum	-5	-22	-8
MEAN PRECIPITATION (INCHES)	1.3	1.3	0.9
MEAN NUMBER OF DAYS			
Precipitation	15	14	12
Snowfall	9	14	10
Thunderstorms	0	0	0

6. PARADROP WEATHER. Poor due to low ceilings and visibilities and frequent precipitation. Conditions are favorable for paratroops 36-58 percent of the time.

7. ASTRONOMICAL DATA. Warsaw, Poland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0658	0658	0618
Last Light	1605	1631	1723

(Prepared: 9 June 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy with moderating temperatures. Mean cloud cover decreases from about 70 percent in March to 60 percent in May. Mean daily minimum temperatures increase from the 20's (F) in March to the 40's in May. Maxi-

mums increase from the 40's to the 60's. Precipitation changes from snow to rain showers, and thunderstorms increase in frequency during May. Gale force winds (28 knots or greater) are common in the southern mountains.

2. FLYING WEATHER. Poor. Improves rapidly in May. Ceiling/visibility less than 5000 feet and/or 6 miles occur up to 60 percent of the time in March; less than 1500/3, up to 40 percent; and less than 500/1, up to 30 percent of the time.

3. RECONNAISSANCE WEATHER. Poor in March and April due to heavy cloud cover and low visibility. Sky cover of 2/8 or less and visibility of 3 miles or greater occur less than 10 days per month. Conditions improve in May.

4. TERMINAL WEATHER. Warsaw, Poland. Poor with frequent low ceilings and visibilities. Ceiling/visibility less than 300/1 occurs up to 20 percent of the time in March, but 5 percent by May.

5. EXPOSURE WEATHER. Cold and snowy in March becoming mild with rain showers in May.

<u>WARSAW, POLAND</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	69	75	93
Mean Maximum	41	54	67
Mean Minimum	28	38	48
Absolute Minimum	-4	24	30
MEAN PRECIPITATION (INCHES)	1.0	1.4	2.1
MEAN NUMBER OF DAYS			
Precipitation	15	13	14
Snowfall	12	2	0
Thunderstorms	*	1	3

* = less than 0.5 day

6. PARADROP WEATHER. Poor through mid-April due to low ceilings and visibilities and frequent precipitation then gradual improvement. Conditions are favorable for paradrops 43-81 percent of the time.

7. ASTRONOMICAL DATA. Warsaw, Poland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0519	0403	0256
Last Light	1813	1910	2007

(Prepared: 9 June 1981)

JUNE - AUGUST

1. GENERAL. Summer is partly cloudy to cloudy and mild with frequent light rain showers and an occasional thunderstorm. Mean cloud cover averages 55 to 70 percent. Mean daily minimum temperatures are mostly in the 50's (F). Maximums are in the 70's. Rain showers occur about 50 percent of the time during the summer months. Thunderstorms occur 3-11 days per month. Gale force winds are infrequent except at certain mountain locations.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 50 percent of the time; less than 1500/3, up to 25 percent; and less than 500/1, less than 5 percent of the time.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 18 days per month or less.

4. TERMINAL WEATHER. Warsaw, Poland. Fair to good. Ceiling/visibility less than 300/1 is infrequent. Weather conditions are generally cloudy with rain showers or thunderstorms.

5. EXPOSURE WEATHER. Cloudy and mild with frequent rain showers.

<u>WARSAW, POLAND</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	90	95	98
Mean Maximum	72	75	73
Mean Minimum	53	56	55
Absolute Minimum	37	44	41
MEAN PRECIPITATION (INCHES)	2.3	3.3	3.8
MEAN NUMBER OF DAYS			
Precipitation	13	14	14
Snowfall	0	0	0
Thunderstorms	4	4	4

6. PARADROP WEATHER. Good, except during rain showers. Conditions are favorable for paratroops 62 to 91 percent of the time.

7. ASTRONOMICAL DATA. Warsaw, Poland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First light	0225	0247	0341
Last Light	2048	2037	1940

(Prepared: 9 June 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is characterized by increasing cloudiness, reduced visibilities and falling temperatures. Mean cloud cover increases from about 70 to 85 percent. Mean daily minimum temperatures decrease from the upper 40's (F) to near freezing. Maximums fall from the mid 60's to the low 40's. Light precipitation frequently occurs with snow becoming common by November. Gale force winds (28 knots or greater) are common in the southern mountains.

2. FLYING WEATHER. Good in September. Poor by November. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 75 percent of the time; less than 1500/3, up to 60 percent; and less than 500/1, up to 30 percent of the time.

3. RECONNAISSANCE WEATHER. Fair to poor in September. Poor by November due to cloud cover and low visibility. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Fair to good in September. Poor by November. Ceiling/visibility less than 300/1 occur up to 30 percent of the time.

5. EXPOSURE WEATHER. Mild with frequent rain showers in September becoming cold and snowy by November.

<u>WARSAW, POLAND</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	88	77	60
Mean Maximum	65	54	40
Mean Minimum	48	41	32
Absolute Minimum	32	17	1
MEAN PRECIPITATION (INCHES)	1.7	1.4	1.5
MEAN NUMBER OF DAYS			
Precipitation	11	13	14
Snowfall	0	1	5
Thunderstorms	1	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Good in September. Poor by November due to low clouds and visibility. Conditions are favorable for paradrops 33-82 percent of the time.

7. ASTRONOMICAL DATA. Warsaw, Poland. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0436	0528	0621
Last Light	1826	1714	1621

(Prepared: 29 December 1981)

SITUATION CLIMATIC BRIEF

PORTUGAL

DECEMBER - FEBRUARY

1. GENERAL. Winter is cool and cloudy with frequent rainfall. Mean daily maximum temperatures are in the 40's and 50's (F) in the north, the 50's and low 60's in the south. Mean daily minimum temperatures are in the 30's and low 40's in the north, the 40's and low 50's in the south. Mean cloudiness is 35-65 percent. In the northern region the mean number of rainy days in winter varies from nine a month along the drier eastern border to 29 a month in the rainy northwest. Over the southern region the range is roughly 15 a month along the west coast to about five a month in the south. Mean monthly precipitation varies from 4-8 inches throughout the country. Gale force winds (28 knots or greater) occur about 5 percent of the time. Thunderstorms occur on 2 days or less each month.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-60 percent of the time; less than 1500/3, 10-30 percent of the time; and less than 500/1, 5-15 percent. Surface winds are frequently strong, so low-level turbulence is a frequent hazard. Thunderstorms occur on 1-2 days per month.

3. RECONNAISSANCE WEATHER. Fair. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on 10-18 days per month.

4. TERMINAL WEATHER. Lisbon, Portugal. Fair. Ceiling/visibility less than 300/1 occurs 5-10 percent of the time. Runway crosswinds (runway 023-203 true) exceed 25 knots 1-2 percent of the time.

5. EXPOSURE WEATHER. Cool temperatures; frequent precipitation and strong, gusty winds can make conditions uncomfortable for outdoor work.

<u>LISBON, PORTUGAL</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	66	68	77
Mean Maximum	57	56	58
Mean Minimum	47	46	58
Absolute Minimum	31	3'	28
MEAN PRECIPITATION (INCHES)	3.3	3.2	3.1
MEAN NUMBER OF DAYS			
Precipitation	14	14	12
Thunderstorms	*	*	J

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrop 40-70 percent of the time.

7. ASTRONOMICAL DATA. Lisbon, Portugal. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0717	0724	0701
Last Light	1746	1808	1841

(Prepared: 29 December 1981)

MARCH - MAY

1. GENERAL. Spring is partly cloudy with mild temperatures and frequent precipitation. Mean cloudiness is 45-65 percent. Mean daily maximum temperatures range from the 40's (F) in the north in March to the 70's in the south in May. Mean daily minimums range from 35 to 55 degrees. Precipitation falls on 10-15 days per month. Mean precipitation is 1.5-4.5 inches. Thunderstorms occur on 1-3 days per month. Gale force winds (28 knots or greater) occur in 1-2 days each month.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occur 20-60 percent of the time; less than 1500/3, 10-30 percent; and less than 500/1, up to 20 percent of the time.

3. RECONNAISSANCE WEATHER. Fair. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on 10-20 days each month.

4. TERMINAL WEATHER. Lisbon, Portugal. Fair. Ceiling/visibility less than 300/1 occurs about 5 percent of the time.

5. EXPOSURE WEATHER. Frequent precipitation can make outdoor work uncomfortable.

<u>LISBON, PORTUGAL</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	83	87	94
Mean Maximum	61	64	69
Mean Minimum	49	52	56
Absolute Minimum	34	37	42
MEAN PRECIPITATION (INCHES)	3.1	2.4	1.7
MEAN NUMBER OF DAYS			
Precipitation	14	10	9
Thunderstorms	1	1	1

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 40-70 percent of the time.

7. ASTRONOMICAL DATA. Lisbon, Portugal. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0622	0534	0455
Last Light	1910	1940	2011

(Prepared: 29 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is sunny and warm with scant precipitation. Mean cloudiness is 20-40 percent. Mean daily maximum temperatures are in the 70's and 80's (F). Minimum temperatures are in the 50's and 60's. Precipitation falls on less than 10 days per month, with total monthly precipitation less than 1 inch at most locations. Thunderstorms occur on up to 3 days per month. Gale force winds (28 knots or greater) are rare in summer.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs up to 40 percent of the time; less than 1500/3, up to 15 percent of the time; and less than 500/1, up to 5 percent of the time.

3. RECONNAISSANCE WEATHER. Fair to good. Total sky cover of 2/8 or less and visibility 3 miles or greater occur on 10-24 days per month.

4. TERMINAL WEATHER. Lisbon, Portugal. Good. Prevailing conditions are sunny, warm, and dry. Ceiling/visibility less than 300/1 occurs only about 1 percent of the time.

5. EXPOSURE WEATHER. The summer climate poses few problems to either personnel or equipment.

<u>LISBON, PORTUGAL</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	99	103	102
Mean Maximum	75	79	80
Mean Minimum	60	63	64
Absolute Minimum	49	52	52
MEAN PRECIPITATION (INCHES)	0.7	0.2	0.2
MEAN NUMBER OF DAYS			
Precipitation	4	2	1
Thunderstorms	10	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable for paradrop over 70 percent of the time.

7. ASTRONOMICAL DATA. Lisbon, Portugal. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0439	0452	0521
Last Light	2035	2032	2000

(Prepared: 29 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is mild and partly cloudy with an increase in precipitation. Mean daily maximum temperatures are in the 60's and 70's (F) in September, but fall to the 50's and low 60's in November. Mean minimum temperatures are in the 50's and 60's in September, the 30's and 40's in November. Mean cloudiness is 30-60 percent with a gradual increase through the season. Precipitation occurs on 12-18 days per month at exposed coastal locations, 6-12 days per month elsewhere. Monthly precipitation amounts are 1-3 inches at sheltered locations and up to 5 inches per month at exposed coastal locations. Thunderstorms occur on 1-2 days per month. Gale force winds (28 knots or greater) are rare during this season.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-65 percent of the time; less than 1500/3, 10-30 percent of the time; less than 500/1, up to 15 percent of the time. In general, flying weather is best in the south and deteriorates northward.

3. RECONNAISSANCE WEATHER. Fair. Total sky cover of 2/8 or less and visibility 3 miles or greater occur on 10-20 days per month. In general, best conditions occur over the south and worst conditions over the north. Nighttime hours are most favorable.

4. TERMINAL WEATHER. Lisbon, Portugal. Good. Ceiling/visibility less than 300/1 occurs 2-8 percent of the time.

5. EXPOSURE WEATHER. Occasional showers or thunderstorms may make outdoor work uncomfortable for short periods of time.

<u>LISBON, PORTUGAL</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	99	93	77
Mean Maximum	76	69	62
Mean Minimum	62	57	52
Absolute Minimum	51	43	34
MEAN PRECIPITATION (INCHES)	1.4	3.1	4.2
MEAN NUMBER OF DAYS			
Precipitation	6	9	12
Thunderstorms	1	1	1

6. PARADROP WEATHER. Fair. Conditions are favorable 35-65 percent of the time. Unfavorable weather is primarily caused by the migratory storms which traverse the area.

7. ASTRONOMICAL DATA. Lisbon, Portugal. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0551	0618	0650
Last Light	1912	1826	1752

(Prepared: 24 June 1981)

SITUATION CLIMATIC BRIEF

ROMANIA

DECEMBER - FEBRUARY

1. GENERAL. Winters are cloudy and cold with frequent light rain or snow. Mean cloudiness ranges from 65 to 80 percent. Daily minimum temperatures vary between 15F and 30F with January being the coldest month. Maximum temperatures are typically in the 30's. Precipitation is light with about an equal probability of rain or snow. Thunderstorms rarely occur. Gale force winds (28 knots or greater) are infrequent at most locations, but occur as often as 20 days per month at some mountain stations.

2. FLYING WEATHER. Fair. Poor over the mountains due to heavy cloud cover. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-65 percent of the time; less than 1500/3, about 40 percent; and less than 500/1, 5-15 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 3-8 days per month. Some improvement occurs toward the end of the season, especially during the evening hours.

4. TERMINAL WEATHER. Bucharest, Romania. Fair to poor. Ceiling/visibility less than 300/1 occurs 10-20 percent of the time. Slightly higher cloud ceilings occur in the afternoon.

5. EXPOSURE WEATHER. Winters in Romania are cold and damp with frequent light rain or snow.

<u>BUCHAREST, ROMANIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	69	62	72
Mean Maximum	38	33	37
Mean Minimum	27	21	24
Absolute Minimum	-16	-23	-15
MEAN PRECIPITATION (INCHES)	1.6	1.3	1.1
MEAN NUMBER OF DAYS			
Precipitation	10	9	9
Snowfall	4	6	4
Thunderstorms	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair over lowland areas. Poor in the mountains where extensive cloud cover, snow, and winds of 15-30 knots make conditions for paradrops favorable 45-60 percent of the time. Elsewhere, favorable paradrop weather occurs 50-70 percent of the time.

7. ASTRONOMICAL DATA. Bucharest, Romania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0710	0716	0646
Last Light	1712	1735	1815

(Prepared: 24 June 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy with frequent light precipitation and moderating temperatures. Mean cloud cover varies from 55 to 80 percent and is greater over central Romania. Precipitation is usually light rain or rain showers; however, snow is not uncommon, especially at higher elevations during early spring. Thunderstorms occur with greater frequency as the season progresses. Mean daily minimum temperatures of 20F to 40F increase to 50F to 60F by May. Average maximum temperatures increase from the mid 40's (F) to the mid 70's. Gale force winds (28 knots or greater) are rare except at higher elevations.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-45 percent of the time; less than 1500/3, 5-30 percent; and less than 500/1, 5-15 percent of the time.

3. RECONNAISSANCE WEATHER. Poor to fair due to extensive cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-25 days per month.

4. TERMINAL WEATHER. Bucharest, Romania. Good. However, thunderstorms and rain showers occur with increasing frequency throughout the season and can briefly affect operations.

5. EXPOSURE WEATHER. Initially, nights are cold and days are cool to mild. However, by May, temperatures have moderated, snowfall has ceased, but the frequency of rainy days has increased.

<u>BUCHAREST, ROMANIA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	84	94	98
Mean Maximum	50	64	75
Mean Minimum	33	43	52
Absolute Minimum	-2	21	30
MEAN PRECIPITATION (INCHES)	1.7	1.7	2.5
MEAN NUMBER OF DAYS			
Precipitation	9	10	13
Snowfall	3	1	*
Thunderstorms	1	1	6

* = less than 0.5 day

6. PARADROP WEATHER. Fair over lowland areas. Poor over higher terrain due to greater cloud cover and strong winds. Conditions at Bucharest are favorable for paradrrops 60-85 percent of the time.

7. ASTRONOMICAL DATA. Bucharest, Romania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0601	0504	0417
Last Light	1850	1929	2008

(Prepared: 24 June 1981)

JUNE - AUGUST

1. GENERAL. Summers are partly cloudy and warm with frequent showers and thunderstorms. Mean cloud cover is 35-60 percent. Mean daily minimum temperatures range from 55F to 65F. Mean daily maximum temperatures are 70F to 85F. Precipitation occurs frequently, usually as rain showers and thunderstorms; however, there is slightly more shower activity in June than in July or August. Gale force winds (28 knots or greater) are infrequent in all areas except the central mountain region where such winds occur an average of 10 days per month.

2. FLYING WEATHER. Good except over mountainous terrain where low clouds and thunderstorms obscure mountain peaks. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-35 percent of the time; less than 1500/3, 2-10 percent; and less than 500/1, only 1-4 percent of the time.

3. RECONNAISSANCE WEATHER. Fair. Occasionally poor in the mountains. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days per month. Evening is the best time for reconnaissance.

4. TERMINAL WEATHER. Bucharest, Romania. Good. Ceiling/visibility less than 300/1 occurs only 1 percent of the time. Occasionally, early morning fog or afternoon thundershowers occur.

5. EXPOSURE WEATHER. Nights are mild and afternoons are warm to hot with frequent afternoon rain showers or thunderstorms.

<u>BUCHAREST, ROMANIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	105	105	106
Mean Maximum	82	86	86
Mean Minimum	59	63	62
Absolute Minimum	40	46	44
MEAN PRECIPITATION (INCHES)	3.5	2.7	2.0
MEAN NUMBER OF DAYS			
Precipitation	17	9	7
Thunderstorms	9	7	4

6. PARADROP WEATHER. Good. Conditions at Bucharest are favorable for paradrops 75-90 percent of the time.

7. ASTRONOMICAL DATA. Bucharest, Romania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0356	0411	0446
Last Light	2037	2032	1948

(Prepared: 24 June 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumns is partly cloudy with mild days, cool night, and frequent showers. Mean cloudiness is 40-70 percent; at higher elevations it is 60-70 percent. Mean daily minimum temperatures range from the mid 50's (F) in September to the low 30's in November. Maximums range from 75F to 45F. Precipitation is

primarily showers, but gradually transitions to light rain and/or snow by October and November. Gale force winds (28 knots or greater) are rare except at high elevations where they occur on as many as 15 days per month.

2. FLYING WEATHER. Good in September and October. Fair in November due to the increased cloudiness and precipitation associated with winter storm activity. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-55 percent of the time; less than 1500/3, 5-40 percent; and less than 500/1, 5-15 percent.

3. RECONNAISSANCE WEATHER. Fair. Poor by November due to increased cloud cover. Sky cover of 2/8 or less and visibility of 3 miles or greater ranges occurs 5-20 days a month with a median of 15 days a month in September and October; November has less than 10 such days.

4. TERMINAL WEATHER. Bucharest, Romania. Good in September and October. Fair to poor by November. Ceiling/visibility less than 300/1 occurs 1-5 percent of the time in September, 5-10 percent in October, and up to 30 percent in November.

5. EXPOSURE WEATHER. Days are mild and nights are cool; by the end of the season early morning freezing temperatures are common. Precipitation amounts and frequency increase slightly through the season and snowfall is to be expected by November.

<u>BUCHAREST, ROMANIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	103	96	85
Mean Maximum	78	65	50
Mean Minimum	55	45	37
Absolute Minimum	29	13	-2
MEAN PRECIPITATION (INCHES)	1.6	1.7	1.9
MEAN NUMBER OF DAYS			
Precipitation	6	8	10
Snowfall	*	*	2
Thunderstorms	2	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions at Bucharest are suitable for paradrrops 65-80 percent of the time through October and 50-65 percent of the time in November.

7. ASTRONOMICAL DATA. Bucharest, Romania. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0525	0601	0639
Last Light	1856	1802	1721

(Prepared: 30 December 1981)

SITUATION CLIMATIC BRIEF

SPAIN

DECEMBER - FEBRUARY

1. GENERAL. Winter is cool with partly cloudy skies and moderate amounts of precipitation. Mean cloudiness is 40-70 percent with cover decreasing southward. Mean daily temperatures vary from lows in the mid to upper 30's (F) to highs near 50F. Temperatures along the coasts are about 10 degrees warmer. Precipitation falls on 5-15 days per month with monthly amounts 3-5 inches along the northern coast and 3 inches or less elsewhere. Thunderstorms are rare. Gale force winds (28 knots or greater) are reported on up to 3 days per month along northern coastal stations.

2. FLYING WEATHER. Good over most of the country and fair over the northern coast, due to frequent and persistent cloud cover. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 70-80 percent of the time along the north coast and 20-40 percent in other areas; less than 1500/3, 20-40 percent along the north coast and 5-20 percent elsewhere; and less than 500/1, less than 10 percent in all areas. Orographically induced turbulence occurs over the mountain ridges of the north and interior as cold air rushes southward behind a migratory storm system.

3. RECONNAISSANCE WEATHER. Fair in most areas except poor along the north coast. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month along the north coast and 10-15 days per month in other areas.

4. TERMINAL WEATHER. Madrid, Spain. Good. Conditions less than 300 feet and/or 3 miles occur less than 5 percent of the time.

5. EXPOSURE WEATHER. The northern areas experience moderate to heavy rain and gusting winds accompanying frontal systems making outdoor work difficult.

<u>MADRID, SPAIN</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	65	64	73
Mean Maximum	48	47	51
Mean Minimum	35	33	35
Absolute Minimum	11	11	15
MEAN PRECIPITATION (INCHES)	1.6	1.1	1.7
MEAN NUMBER OF DAYS			
Precipitation	9	9	9
Snowfall	1	1	1
Thunderstorms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops 50-75 percent of the time.

7. ASTRONOMICAL DATA. Madrid, Spain. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0659	0705	0640
Last Light	1719	1741	1816

(Prepared: 14 December 1981)

MARCH - MAY

1. GENERAL. Spring is mainly warm with partly cloudy skies and occasional showers and thunderstorms. Mean cloudiness is 40-60 percent. Mean daily maximum temperatures range from the high 50's (F) in March to the 70's in May. Mean minimum temperatures range from 40F to 60F. Precipitation occurs on 5-12 days per month with monthly amounts of 1.5-3.0 inches. Thunderstorms are reported on up to 6 days per month. Gale force winds (28 knots or greater) occur on 1-3 days per month.

2. FLYING WEATHER. Generally good. Throughout much of Spain ceilings less than 5000 feet and/or visibilities less than 6 miles occur 20-45 percent of the time; less than 1500/1, 15 percent or less; and less than 500/1, less than 5 percent. An exception is along the northern coast, where ceilings/visibilities are below 5000/6 50-70 percent of the time; below 1500/3, 15-30 percent; and below 500/1, up to 15 percent. Up to 6 thunderstorms are reported each month. Icing and turbulence, when not associated with thunderstorm activity, occur along the frontal zones of migratory storm systems, particularly in the north.

3. RECONNAISSANCE WEATHER. Poor along the northern coast, fair in elsewhere. The number of days with 2/8 or less cloud cover and 3 miles or more visibility is less than 10 per month along the north coast, 10-20 days per month in other areas.

4. TERMINAL WEATHER. Madrid, Spain. Good. The prevailing conditions throughout interior Spain tend to be mild and dry. Conditions less than 300 feet and/or 1 mile occur less than 1 percent of the time. Thunderstorms occur on 1-2 days in March and April and 4 days in May.

5. EXPOSURE WEATHER. Frontal weather causing showers and thunderstorms may produce strong, gusty winds and heavy rains which could hinder outdoor activity.

MADRID, SPAIN	MAR	APR	MAY
TEMPERATURE (F)			
Absolute Maximum	81	93	96
Mean Maximum	57	64	71
Mean Minimum	40	44	50
Absolute Minimum	17	26	31
MEAN PRECIPITATION (INCHES)	1.7	1.7	1.5
MEAN NUMBER OF DAYS			
Precipitation	11	9	9
Thunderstorms	1	2	4

6. PARADROP WEATHER. Fair. Conditions are favorable 30-55 percent of the time along the north coast and 60-80 percent of the time over other areas.

7. ASTRONOMICAL DATA. Madrid, Spain. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	MAR	APR	MAY
First Light	0559	0508	0427
Last Light	1847	1921	1954

(Prepared: 30 December 1981)

JUNE - AUGUST

1. GENERAL. Summer is typically warm and sunny with occasional isolated afternoon thunderstorms. Mean cloudiness is 20-60 percent generally decreasing southward. Mean daily maximum temperatures range from 70F to 90F, mean minimums from 50F to 60F. Precipitation falls on 10 days or less per month, with monthly amounts of 1 inches or less. Thunderstorms occur on up to 8 days per month at some interior stations. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Good. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur up to 20 percent of the time; less than 1500/3, 5 percent or less; and less than 500/1 is rare. Afternoon thunderstorms may produce locally severe turbulence to 20,000 feet or higher. Thermally induced low-level turbulence is also common.

3. RECONNAISSANCE WEATHER. Good over the interior and southern regions and poor over the northern coast. The north coast has less than 2/8 cloud cover and 3 miles or greater visibility on only 10 days per month. Other areas have favorable conditions on 20 or more days each month.

4. TERMINAL WEATHER. Madrid, Spain. Good. Skies are frequently clear and ceilings less than 300 feet and/or visibilities less than 1 mile occur less than 0.5 percent of the time. Thunderstorms occur on 1-2 days each month.

5. EXPOSURE WEATHER. The prevailing condition is excellent. Only an occasional shower or thunderstorm may cause uncomfortable conditions for brief periods.

<u>MADRID, SPAIN</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	105	112	109
Mean Maximum	80	87	86
Mean Minimum	57	62	62
Absolute Minimum	38	45	47
<u>MEAN PRECIPITATION (INCHES)</u>	1.2	0.4	0.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	6	3	2
Thunderstorms	2	1	1

6. PARADROP WEATHER. Good. Favorable weather occurs over 70 percent of the time in most areas. An exception is the north coast, where conditions are only fair due to persistent low cloudiness.

7. ASTRONOMICAL DATA. Madrid, Spain. (Date as of the 15th/local standard time).

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0409	0423	0454
Last Light	2019	2015	1941

(Prepared: 30 December 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is warm and mostly sunny with occasional scattered showers and thunderstorms. Mean cloudiness is 30-60 percent. Mean daily maximum temperatures vary from 65F to 85F, and mean minimums from 40F to 60F. Precipitation occurs on 5-10 days per month; monthly totals are less than 2 inches in most areas. Thunderstorms occur on 1-3 days per month. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Good. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 10-40 percent of the time; less than 1500/3, 20 percent or less; and less than 500/1, 5 percent or less. An exception is the northern coast of Spain where conditions are usually poor due to frequent and persistent low cloud cover. Over the north coast conditions less than 5000/6 occur up to 80 percent of the time; 1500/3, up to 40 percent; and 500/1, up to 20 percent.

3. RECONNAISSANCE WEATHER. Good. Clear to partly cloudy skies prevail. Total sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 20 days or more per month in most areas. An exception is the northern coast, where frequent low cloudiness lowers the number of favorable days to only 5-10 each month.

4. TERMINAL WEATHER. Madrid, Spain. Good. Clear to partly cloudy skies prevail. Conditions less than 300 feet and/or 1 mile occur less than 1 percent of the time.

5. EXPOSURE WEATHER. Autumn poses few problems for either personnel or equipment.

<u>MADRID, SPAIN</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	103	91	78
Mean Maximum	77	66	54
Mean Minimum	56	48	40
Absolute Minimum	36	25	18
MEAN PRECIPITATION (INCHES)	1.2	1.9	2.2
MEAN NUMBER OF DAYS			
Precipitation	6	8	10
Thunderstorms	2	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Good except along the north coast, where conditions are poor due to frequent clouds below 1500 feet. Conditions are favorable less than 40 percent of the time over the north coast, but in other areas conditions are favorable over 70 percent of the time.

7. ASTRONOMICAL DATA. Madrid, Spain. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0526	0557	0630
Last Light	1851	1802	1726

(Prepared: 22 October 1981)

SITUATION CLIMATIC BRIEF

SWEDEN

DECEMBER - FEBRUARY

1. GENERAL. Winter in Sweden is cloudy and cold with frequent light snow. Mean daily maximum temperatures are in the teens and 20's (F) in the north, the 20's and 30's south. Mean minimums are zero to 25F in the north and 15F to 25F in the south. Temperatures are 10-20 degrees colder at higher elevations. Cloudiness averages 60-80 percent in most areas throughout the winter. Snow is the predominant type of precipitation in winter, with mean monthly precipitation totals of less than 2 inches. Relative humidity averages 80-90 percent throughout the season. Surface wind speeds are usually less than 16 knots. Higher winds usually occur at exposed mountain and coastal locations, but even there they occur only about 10 percent of the time or less. Thunderstorms are rare.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs approximately 30-70 percent of the time; less than 1500/3, 10-45 percent; and less than 500/1, 3-15 percent.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility greater than 3 miles occur on less than 10 days per month.

4. TERMINAL WEATHER. Stockholm, Sweden. Fair. The weather is cloudy and cold with frequent snow showers. Ceiling/visibility less than 300/1 occurs 8-13 percent of the time.

5. EXPOSURE WEATHER. There is continuous snow cover in the highlands and in the northern regions from early November into early May.

<u>STOCKHOLM, SWEDEN</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	54	51	53
Mean Maximum	34	31	31
Mean Minimum	26	23	22
Absolute Minimum	-6	-19	-13
MEAN PRECIPITATION (INCHES)	1.9	1.5	1.1
MEAN NUMBER OF DAYS			
Precipitation	16	14	13
Snowfall	11	12	11
Thunderstorms	0	*	0
Fog	6	5	5

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Frequent and persistent cloud cover is the main restriction. Favorable conditions occur less than 40 percent of the time.

7. ASTRONOMICAL DATA. Stockholm, Sweden. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0744	0741	0642
Last Light	1543	1615	1723

(Prepared: 27 October 1981)

MARCH - MAY

1. GENERAL. Spring in Sweden is cloudy with occasional light showers. Temperatures are cold during early spring, but moderate as the season progresses. Mean cloudiness is 45-65 percent. Mean daily maximum temperatures range from the 20's and 30's (F) in March to the 40's and 50's in May. Mean daily minimums are 5-25F in March, 30-45F in May. Precipitation, predominantly light snow or rain showers, occurs on 7-18 days per month with mean monthly amounts of 2 inches or less. Thunderstorms and gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Poor. Frequent and persistent cloud cover is the main restriction to flying activities. Ceiling/visibility less than 5000 feet and/or 6 miles occurs approximately 30-70 percent of the time; less than 1500/3, 10-40 percent; and less than 500/1, 3-15 percent.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility greater than 3 miles occur on less than 10 days per month at most stations.

4. TERMINAL WEATHER. Stockholm, Sweden. Fair. The weather is cloudy and cool with frequent light precipitation. Ceiling/visibility less than 300/1 occurs 2-8 percent of the time.

5. EXPOSURE WEATHER. Poor drainage (a result of glaciation) is a problem everywhere in the lowland regions. As a result, high water and flooding are problems in these lowland areas. Snow cover lasts until early May in the north and until after mid-April in the south. Cold temperatures early in the season moderate as the season progresses.

<u>STOCKHOLM, SWEDEN</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	59	73	84
Mean Maximum	37	46	57
Mean Minimum	24	32	40
Absolute Minimum	-9	6	24
MEAN PRECIPITATION (INCHES)	1.1	1.5	1.6
MEAN NUMBER OF DAYS			
Precipitation	14	11	13
Snowfall	11	5	2
Thunderstorms	0	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Cloud ceilings less than 1500 feet and/or precipitation are the main restrictions. Favorable conditions occur on 10-20 days per month.

7. ASTRONOMICAL DATA. Stockholm, Sweden. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0606	0435	0316
Last Light	1749	1903	2014

(Prepared: 30 October 1981)

JUNE - AUGUST

1. GENERAL. Summer in Sweden is warm and humid with frequent light rain showers. Mean daily maximum temperatures range from 60F to 70F except at high elevations. Mean daily minimums range from the upper 30's to the mid 50's. Mean relative humidity is 55-85 percent. Precipitation falls on 10-18 days per month, with mean monthly amounts of 2-4 inches. Thunderstorms occur on 7 days per month or less. Hail occurs about 5 percent of the time with thunderstorms. Although they are rare in Sweden, several moderate tornadoes have occurred over southern interior regions in summer. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-40 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, 5 percent of the time. Surface wind speeds are usually less than 16 knots.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility greater than 3 miles occurs on less than 10 days per month at most stations.

4. TERMINAL WEATHER. Stockholm, Sweden. Fair. The weather is cloudy with warm temperatures and frequent light rain showers. Ceilings are usually above 1000 feet. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. Thunderstorms occur on 2-3 days per month.

5. EXPOSURE WEATHER. Drainage is poor throughout most of the lowland regions. High water and flooding can occur in these areas during and after periods of heavy showers.

<u>STOCKHOLM, SWEDEN</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	90	94	88
Mean Maximum	66	71	67
Mean Minimum	49	55	53
Absolute Minimum	32	40	36
MEAN PRECIPITATION (INCHES)	1.9	2.8	3.1
MEAN NUMBER OF DAYS			
Precipitation	12	15	16
Thunderstorms	2	3	2
Fog	1	1	1

6. PARADROP WEATHER. Fair. Cloud ceilings less than 1500 feet and/or precipitation are the main restrictions. Favorable conditions occur on 15-25 days per month. Afternoon is the worst time.

7. ASTRONOMICAL DATA. Stockholm, Sweden. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0102	0143	0314
Last Light	2236	2203	2030

(Prepared: 29 October 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in Sweden is cloudy and cool with frequent light precipitation. Mean cloudiness is 60-80 percent. Precipitation occurs on 10-18 days per month with mean amounts of 1-3 inches. Temperatures decrease steadily through the season; mean maximum temperatures are 45-70F in September, but only 25-45F in November. Similarly, mean minimum temperatures are 35-50 degrees in September, 10-35 degrees in November. Thunderstorms and gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair becoming poor. Flying conditions deteriorate from fair during September to poor during November. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-50 percent of the time in September, but 50-80 percent in November; less than 1500/3, 10-30 percent in September and 30-60 percent in November; and less than 500/1, 3-10 percent in September and 5-20 percent in November.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 5-10 days per month.

4. TERMINAL WEATHER. Stockholm, Sweden. Deteriorates from fair in September to poor during November due to an increase in the frequency and duration of fog and low clouds. Ceiling/visibility less than 300/1 occurs 5 percent of the time in September and 12 percent of the time during November.

5. EXPOSURE WEATHER. Subfreezing temperatures, high humidity, and frequent precipitation can restrict outdoor activities.

<u>STOCKHOLM, SWEDEN</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	78	65	57
Mean Maximum	59	48	39
Mean Minimum	46	38	31
Absolute Minimum	29	16	0
MEAN PRECIPITATION (INCHES)	2.1	2.1	1.9
MEAN NUMBER OF DAYS			
Precipitation	4	6	6
Snowfall	*	2	6
Thunderstorms	1	*	0
Fog	4	6	6

* = less than 0.5 day

6. PARADROP WEATHER. Fair in September. Poor by November. Favorable conditions occur on an average of 10-20 days in September, but only 5-15 days in November.

7. ASTRONOMICAL DATA. Stockholm, Sweden. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0515	0625	0741
Last Light	1810	1642	1524

SITUATION CLIMATIC BRIEFS

PART F

LATIN AMERICA

SITUATION CLIMATIC BRIEFS - PART F

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* Only two seasons available.

(Prepared: 3 August 1979)

SITUATION CLIMATIC BRIEF

BELIZE

ANNUAL

1. GENERAL. The weather in Belize is hot, humid, and cloudy for most of the year. Rainfall is moderate to heavy from April through January. There is a short reduction in cloudiness and rainfall during February and March. In the southern one-quarter of the country rainfall is extremely heavy from June through September. Mean cloudiness is 55-70 percent from April through January, and slightly less than 50 percent in February and March. Minimum temperatures are in the 60's (F) from November through March and in the 70's from April through October. Maximum temperatures vary from the lower to upper 80's. Thunderstorms are uncommon in northern Belize, but their frequency increases southward. Thunderstorms occur during the morning along the coast and during the afternoon inland. May through October are the months of greatest thunderstorm frequency. Surface winds are northeast to east at 8-15 knots. Mid-latitude cold fronts occasionally affect Belize from November through March, bringing a day or two of rain and strong northerly winds. Belize is affected by tropical storms and hurricanes from May through November. The monthly probability of having at least 1 tropical storm and/or hurricane ranges from 5 to 20 percent with the greatest probability in September.

2. FLYING WEATHER. Fair to good. The percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles ranges from 25 to 50 percent; less than 1500 feet/3 miles, 10-20 percent. Flying activities may be restricted by early morning fog, heavy rainfall, or thunderstorms.

3. RECONNAISSANCE WEATHER. Fair to poor. During the months of October through May the sky cover is 2/8 or less and the visibility is 3 miles or more 15-30 percent of the time. During June through September the weather is favorable 5-10 percent of the time.

4. TERMINAL WEATHER. Belize City. Hot and humid with moderate to heavy rainfall. Mean minimum temperatures are generally in the high 60's to mid 70's (F) with mean maximum temperatures in the low to mid 80's. Mean relative humidities range from 75 to 90 percent. Rainfall is expected on 4-18 days per month with the heaviest rainfall from June through January. The ceiling/visibility is less than 300/1 approximately 1 percent of the time, primarily during the early morning hours. Rain, haze/smoke, and early morning fog are the primary restrictions to visibility. Runway crosswinds are greater than 15 knots 1-3 percent of the time.

5. EXPOSURE WEATHER. Hot and humid with moderate to heavy rainfall. Thunderstorms are numerous in southern Belize.

<u>BELIZE CITY</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	90	93	98	99	97	97
Mean Maximum	82	83	85	87	88	88
Mean Minimum	68	69	72	74	75	76
Absolute Minimum	50	49	50	55	57	62
<u>MEAN PRECIPITATION (INCHES)</u>	5.7	2.7	1.6	2.4	5.0	9.1
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	12	6	4	4	7	14
Thunderstorms	0	*	0	0	1	4

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	95	96	97	95	95	93
Mean Maximum	88	88	89	86	84	82
Mean Minimum	76	76	75	73	69	68
Absolute Minimum	63	61	60	58	52	46
MEAN PRECIPITATION (INCHES)	7.6	7.3	9.5	12.4	9.8	7.2
MEAN NUMBER OF DAYS						
Precipitation	18	16	18	15	13	14
Thunderstorms	2	4	5	1	*	0

* = less than 0.5 day

5. PARADROP WEATHER. Favorable 60-80 percent of the time. The weather is unfavorable primarily due to low cloudiness and rainfall.

7. ASTRONOMICAL DATA. Belize City. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0604	0558	0540	0515	0458	0454
Last Light	1802	1817	1825	1832	1841	1853
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0503	0513	0519	0524	0535	0552
Last Light	1855	1842	1817	1753	1740	1745

(Prepared: 5 November 1979)

SITUATION CLIMATIC BRIEF

BOLIVIA

DECEMBER - FEBRUARY

1. GENERAL. Summer is wet and cloudy in Bolivia. The exception is the southwest plateau where the least cloud cover and precipitation occurs. The lowlands are hot and humid and the temperatures are frequently above 90F. The highlands are cooler and less humid, with high temperatures averaging 60-70F and low temperatures 25-45F. Monthly precipitation amounts average 2-8 inches in the highlands and 6-11 inches in the lowlands. El Cafetal receives as much as 56 inches in February. Snowfall is confined to the highlands above 14,000 feet. Thunderstorm frequency increases during the summer, particularly over the northern highlands where hail frequently accompanies the thunderstorms. The mean number of thunderstorm days per month ranges from 13 in the northern highlands to 6 in the northern lowlands. Visibility is generally good, except that heavy rain showers and morning fog reduce visibility and low hanging clouds obscure the higher terrain. The greatest incidence of fog occurs in the northern highlands, an average of 3-6 days, and in the northern lowlands, 2-4 days. Surface winds are light, except for afternoon gusts in the central foothills of the lowlands and in the northeast-southwest highlands.

2. FLYING WEATHER. Most favorable in the southwest plateau region; least favorable in the central to northern regions due to morning fog and heavy afternoon rain showers. In the highlands ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-20 percent of the time; 1500/3, 2-15 percent. In the lowlands ceiling/visibility less than 5000/6 occurs 45-65 percent of the time; 1500/3, 10-20 percent. Over higher terrain, high-level clear-air turbulence can be severe.

3. RECONNAISSANCE WEATHER. Poor during summer. The exception is the southwest plateau where, during the morning in December, fair to good weather occurs an average of 19 days. All locations have a greater incidence of cloud cover during the afternoon. Sky cover equal to or less than 2/8 and visibility equal to or greater than 3 miles ranges from 5 to 10 days.

4. TERMINAL WEATHER. La Paz, Bolivia. Cloudy skies, cool temperatures, and occasional rainy periods. The greatest incidence of low ceilings and visibilities occurs during the morning. Fog occurs an average of 5 days per month. The frequency of ceiling/visibility less than 300/1 is 2 percent. Crosswinds greater than 15 knots occur 2-4 percent of the time; greater than 25 knots, 1 percent.

5. EXPOSURE WEATHER. Cool with occasional rain showers in the plateau regions. Higher elevations (above 14,000 feet where the precipitation falls as snow) are cold with perennial snow cover over the mountain peaks. From the foothills to the lowlands conditions are hot and humid, with frequent heavy rain showers sometimes causing flash floods.

<u>LA PAZ, BOLIVIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	76	77	76
Mean Maximum	65	63	63
Mean Minimum	42	43	43
Absolute Minimum	22	25	26
MEAN PRECIPITATION (INCHES)	3.7	4.5	4.2
MEAN NUMBER OF DAYS			
Precipitation	6	7	7
Thunderstorms	2	2	2

6. PARADROP WEATHER. Favorable 35-75 percent of the time. Most favorable areas are the southwest plateau regions in the morning. Least favorable areas are the northern highlands and lowlands due to morning fog, low ceilings, and afternoon rain showers. Conditions are also unfavorable 10-35 percent of the time at all locations during the afternoon due to gusty winds.

7. ASTRONOMICAL DATA. La Paz, Bolivia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0531	0549	0606
Last Light	1925	1936	1928

(Prepared: 18 January 1980)

MARCH - MAY

1. GENERAL. Autumn is the transition season from the rainy summer to the dry winter. The climate undergoes a decrease in cloudiness and precipitation. In the highlands mean precipitation amounts range from 1-4 inches during March to less than 1 inch in May. In the lowlands averages range from 3-20 inches in March to 1-10 inches in May. Snowfall is confined to the higher elevations above 14,000 feet. The highlands are cool with high temperatures in the 60's (F) and low 70's and the lows in the 30's and low 40's. The lowlands are hot and humid with mean highs in the 80's and low 90's; lows range from the 60's to 70's. In May temperatures at a few southern stations drop to the 50's. Thunderstorm frequency ranges from 1-5 days. The greatest incidence occurs over the northern highlands during March and April. Visibilities are good, except during morning fog and rain showers. Fog occurs in the northern lowlands on 10-13 days per month. Surface winds are usually less than 10 knots.

2. FLYING WEATHER. Most favorable over the highlands, particularly during the morning in the southwestern plateau; least favorable in the northern lowlands due to morning fog and afternoon showers. In the highlands ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-20 percent of the time; 1500/3, 2-10 percent. In the lowlands less than 5000/6 occurs 25-45 percent of the time; 1500/3, 5-15 percent. High-level clear-air turbulence can be severe, particularly over higher terrain.

3. RECONNAISSANCE WEATHER. Good over the southwestern plateau. Poor during March to fair to good by May over the northern highlands. The lowlands have generally poor reconnaissance weather, except the southeast areas where fair conditions prevail during the morning. In the highlands cloud cover equal to or less than 2/8 and visibility equal to or greater than 3 miles occurs on 10-20 days during March and increases to 15-25 days in May. In the lowlands favorable conditions occur on 3-9 days in March and 5-15 days in May.

4. TERMINAL WEATHER. La Paz, Bolivia. Decrease in cloudiness and precipitation. The greatest incidence of low ceilings/visibilities occurs in March. The occurrence of fog decreases from 6 days in March to 1 day in May. The frequency of ceiling/visibility less than 300/1 is 1 percent. The frequency of flight restrictive crosswinds is small, with crosswinds greater than 15 knots occurring only 2 percent of the time.

5. EXPOSURE WEATHER. The highlands are generally dry and temperatures range from cool at the plateau level to cold at the higher elevations (above 15,000 feet with perennial snow covers the higher peaks). The lowlands are warm to hot and humid with occasional heavy rain showers.

LA PAZ, BOLIVIA

	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	76	75	72
Mean Maximum	64	65	64
Mean Minimum	42	50	37
Absolute Minimum	27	24	14
MEAN PRECIPITATION (INCHES)	2.6	1.3	0.3
MEAN NUMBER OF DAYS			
Precipitation	4	2	2
Thunderstorms	3	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 40-90 percent of the time. The northern lowlands are the least favorable due to morning fog, low ceilings, and afternoon rain showers. Paradrop can be affected by the low air densities over the high plateau, especially on warm, sunny days. Afternoon winds in excess of 13 knots produce unfavorable conditions 10-30 percent of the time in the foothills and higher elevations.

7. ASTRONOMICAL DATA. La Paz, Bolivia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0614	0619	0629
Last Light	1909	1846	1832

(Prepared: 21 January 1980)

JUNE - AUGUST

1. GENERAL. Winter is the season of minimum cloudiness and precipitation. Partly cloudy skies prevail and showers are less frequent. The greatest incidence of cloud cover and precipitation occurs over the lowlands. In the highlands mean high temperatures vary from 60 to 70F; mean lows from 10 to 35F. In the lowlands daytime highs reach the 80's and 90's. Mean nighttime lows occasionally drop below 50F and on rare occasions drop below freezing in the extreme south. Mean precipitation amounts in the highlands are less than an inch and in the lowlands range from less than an inch to 6 inches. Snowfall is confined to elevations above 14,000 feet. Visibility is good, with the exception of morning fog and low-lying clouds over the slopes and ridges. The greatest incidence of fog occurs during June in the northern lowlands (14 days). Thunderstorms occur on an average of 2-4 days per month. Surface winds are light, except over higher terrain where speeds range from 10 to 15 knots during the afternoon.

2. FLYING WEATHER. Most favorable over the highlands and southern lowlands; least favorable over the northern lowlands due to morning low cloudiness, fog, and afternoon rain showers. In the highlands ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time; less than 1500/3, 1-5 percent. In the lowlands less than 5000/6 occur 25-50 percent of the time; 1500/3, 5-18 percent. High-level clear-air turbulence can be severe, particularly over higher terrain.

3. RECONNAISSANCE WEATHER. Fair to good over the highlands and poor in the northern lowlands to good over the southern lowlands. The most favorable conditions occur over the southwest plateau. The least favorable conditions occur over the northern lowlands where the greatest incidence of cloud cover occurs. In the highlands sky cover equal to or less than 2/8 and visibility equal to

or greater than 3 miles occurs on 15-27 days. In the lowlands good weather occurs on 10-20 days.

4. TERMINAL WEATHER. La Paz, Bolivia. Partly cloudy skies, mild to warm afternoons, cool to cold nights, and infrequent precipitation. Visibility is restricted due to morning fog on an average of 1-2 days. The frequency of ceiling/visibility less than 300/1 is 1 percent. Crosswinds greater than 15 knots occur 2-4 percent of the time; greater than 25 knots, less than 1 percent.

5. EXPOSURE WEATHER. The highlands are mainly dry with mild days and cool to cold nights. The higher elevations, where perennial snow covers the highest peaks, are cold. The tropical lowlands are warm to hot and humid with occasional rain showers, particularly in the northern regions.

<u>LA PAZ, BOLIVIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	70	71	72
Mean Maximum	62	62	63
Mean Minimum	34	33	35
Absolute Minimum	12	5	9
MEAN PRECIPITATION (INCHES)	0.3	0.4	0.5
MEAN NUMBER OF DAYS			
Precipitation	1	1	1
Thunderstorms	0	0	0

6. PARADROP WEATHER. Favorable 30-95 percent of the time. Low ceilings associated with afternoon rain showers make the lowlands the least favorable. Unfavorable conditions occur 10-40 percent of the time with winds in excess of 13 knots in the highlands and the foothills of the lowlands. Over the higher elevations low air densities can affect paradrops, particularly on warm and sunny days.

7. ASTRONOMICAL DATA. La Paz, Bolivia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0635	0639	0629
Last Light	1831	1839	1846

(Prepared: 3 November 1979)

SEPTEMBER - NOVEMBER

1. GENERAL. The spring season is characterized by increasing cloudiness and precipitation as the rainy summer months approach. The lowlands average 15 percent more cloud cover than the highlands. In the highlands mean precipitation amounts gradually increase from 1 inch during September to nearly 6 inches in November. In the lowland areas averages of 3 inches increase to 8 inches by November, with a maximum of 29 inches in November at El Cafetal. Temperatures are controlled by elevation. Mean high temperatures in the 90's (F) in the lowlands to the 60's at higher elevations. Mean lows from the foothills to higher elevations (above 15,000 feet) range from the high 60's to below zero. Visibility is generally good, except restrictions do occur with morning fog, low hanging clouds over higher terrain, and heavy showers. The latter is particularly a problem in the lowlands in the afternoon hours. The greatest incidence of fog occurs during September at northern lowland localities (9 days) and in the western highlands (4 days). Surface winds are light with highest speeds in the afternoon. Gale force winds are uncommon, except with thunderstorms.

2. FLYING WEATHER. The most favorable flying weather occurs in the southwestern highlands; the next most favorable weather is in the central to northern areas where maximum cloudiness and/or fog occurs during the morning. The least favorable flying weather occurs in the northern lowlands where morning fog and afternoon showers prevail. The entire country has a greater incidence of cloudiness in November than during the other months as the spring season ends. In the highlands the ceiling/visibility equal to or less than 5000 feet and/or 6 miles occurs 10-15 percent of the time; 1500/3, 1-6 percent. In the lowlands conditions less than 5000/6 occur 35-60 percent of the time; 1500/3, 5-15 percent. Thunderstorms accompanied by hail usually occur over the higher elevation with the highest occurrence in the northern regions of the highlands and the lowlands. Over the higher terrain severe, high-level clear-air turbulence is a hazard.

3. RECONNAISSANCE WEATHER. Good over the southwestern plateau; fair to good in the northern highlands but becomes poor during November; generally poor in the lowlands. All locales have a higher incidence of cloud cover during the afternoon. In the highlands sky cover equal to or less than 2/8 and visibility equal to or greater than 3 miles occur on 10-25 days during September. The occurrences decrease to 5-20 days in November. The occurrences in the lowlands range from 5-15 days in September to 3-10 days in November.

4. TERMINAL WEATHER. La Paz, Bolivia. Partly cloudy to overcast skies, cool temperatures, and occasional periods of precipitation. The greatest incidences of low clouds and precipitation occur in November. Visibility restrictions occur with morning fog which develops on an average of 4 days per month. The frequency of ceiling/visibility equal to or less than 300/1 is 1 percent. Crosswinds greater than 15 knots occur 3-5 percent of the time; greater than 25 knots, 1 percent.

5. EXPOSURE WEATHER. The lowlands are hot and humid with occasional periods of heavy showers. The highlands are mainly dry and cool at the plateau level and very cold at the higher elevations, where perennial snow covers the highest mountain peaks.

<u>LA PAZ, BOLIVIA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	80	76	77
Mean Maximum	64	66	67
Mean Minimum	38	40	42
Absolute Minimum	18	16	23
MEAN PRECIPITATION (INCHES)	1.1	1.5	1.9
MEAN NUMBER OF DAYS			
Precipitation	3	3	4
Thunderstorms	2	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Favorable 35-85 percent of the time. The least favorable areas are in the lowlands due to morning fog, low ceiling, and afternoon rain showers. Low air densities on the high plateau can affect paradrops, particularly during the afternoon on warm sunny days. Winds in excess of 13 knots produce unfavorable conditions 10-30 percent of the time.

7. ASTRONOMICAL DATA. La Paz, Bolivia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0607	0543	0528
Last Light	1849	1854	1907

(Prepared: 22 January 1980)

SITUATION CLIMATIC BRIEF

CHILE-ARGENTINA SOUTH OF 40 DEGREES SOUTH

ANNUAL

1. GENERAL. The weather is generally cloudy, windy, and cold year-round. Rainfall amounts vary from over 300 inches per year on the exposed Chilean Islands to less than 10 inches in those parts of Argentina sheltered from the prevailing winds by the Andes Mountains. The mean number of days with snowfall ranges between 2 to 10 per month during May through October, mainly at the higher elevations and in the more southerly latitudes. Snowfall is infrequent in the remaining months except in the mountains. Mean cloudiness is quite uniform throughout the year, and varies between about 50-90 percent depending on location. Daily minimum temperatures range from the high 20's (F) to the low 40's in winter and from the high 30's to low 50's in summer. High temperatures are 35-50F during the winter, and 50-70F during the summer. Locations at high altitudes in the Andes are considerably colder. This area of the globe is known as the roaring forties due to the strong, persistent westerly winds. Mean wind speeds are near 20 knots in all months. Gale force winds are quite frequent. In the mountains winds of gale force occur nearly every day, and speeds of over 100 knots are common along the ridge lines. Thunderstorms are infrequent to rare in this area.

2. FLYING WEATHER. Fair to poor. The ceiling/visibility is less than 5000 feet and/or 6 miles as often as 75 percent of the time on the exposed slopes of the Andes during the winter months; less than 1500 feet/3 miles, 30 percent; and less than 500/1, 15 percent. During the summer months conditions less than 5000/6 occur 15-25 percent of the time; less than 1500/3, 1-15 percent; and less than 500/1, up to 6 percent. Mountain-wave turbulence and aircraft icing is common in this area, particularly in the vicinity of frontal systems.

3. RECONNAISSANCE WEATHER. Generally poor due to persistent heavy cloud cover. The mean number of days per month with cloud cover 2/8 or less and visibility 3 miles or greater ranges from 0-15 days. Favorable conditions can occur for 3 or 4 hours following cold frontal passage during the winter.

4. TERMINAL WEATHER. Puerto Montt, Chile. Fair. Conditions are usually cloudy and cool with frequent rainfall. Ceiling/visibility less than 300/1 occurs up to 8 percent of the time, usually during the late evening and early morning. Gale force winds occur on 1-2 days per month during the winter.

TERMINAL WEATHER. Punta Arenas, Chile. Fair. The weather is mostly cloudy and cold with occasional light rain or snow. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time in June and July, but infrequently during other months. Gale force winds occur on 1-5 days per month.

5. EXPOSURE WEATHER. Cloudy, windy, and cold almost all year. The Chilean archipelago and the western slopes of the Andes receive frequent and heavy rainfall. Those areas of Argentina in the lee of the Andes receive little rain, but are mostly cloudy nonetheless. The cold temperatures, high humidity, and strong wind speeds combine to make exposure weather generally uncomfortable.

PUNTA ARENAS, CHILE (TIERRE DEL FUEGO)

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
TEMPERATURE (F)						
Absolute Maximum	86	79	75	69	63	52
Mean Maximum	59	58	55	49	43	40
Mean Minimum	45	44	43	39	35	33
Absolute Minimum	26	28	23	23	16	11

MEAN PRECIPITATION (INCHES)	1.4	1.3	2.0	1.9	2.1	1.5
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MEAN NUMBER OF DAYS						
Precipitation**	8	7	10	10	9	8
Thunderstorms	0	0	*	*	0	0

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	55	55	61	67	76	79
Mean Maximum	38	40	45	50	54	57
Mean Minimum	33	33	35	38	40	43
Absolute Minimum	12	15	19	25	23	23

MEAN PRECIPITATION (INCHES)	1.5	1.6	1.3	1.2	1.3	1.4
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MEAN NUMBER OF DAYS						
Precipitation**	8	9	8	7	7	8
Thunderstorms	0	0	0	0	0	*

* = less than 0.5 day

** = includes snowfall

6. PARADROP WEATHER. Usually poor due to precipitation, low clouds, and wind speeds greater than 13 knots. Conditions are favorable only 10-50 percent of the time.

7. ASTRONOMICAL DATA. Chabunco (Punta Arenas), Chile. (Date as of the 15th/ local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0355	0503	0600	0655	0742	0814
Last Light	2150	2051	1943	1831	1737	1714
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0808	0723	0615	0502	0353	0321
Last Light	1731	1813	1903	1958	2104	2157

SITUATION CLIMATIC BRIEF

CHILE-PERU BORDER AREA

ANNUAL

1. GENERAL. The climate of this area is extremely arid. Some parts of the Atacama Desert in Chile have received less than 1 inch of rainfall in a 50-year period. Coastal areas average 60-80 percent morning cloudiness, primarily low clouds, during the summer, and 80 to nearly 100 percent cloudiness during the winter. Afternoon values range from 30-60 percent. Inland desert areas are much less cloudy, averaging 5-25 cloudiness in summer and 20-40 percent in winter. Mountain areas average 20-90 percent cloudiness depending on location. Mean temperatures are cool for this latitude. Daily minimums along the coast range from 45 to 65F from winter to summer, maximums from 65 to 85F. The inland desert has about the same morning minimums as the coastal areas, but afternoon maximums can reach the high 80's or low 90's (F). Mountain locations are cool to cold. Very high altitudes have temperatures well below zero (F) during the cold months. Relative humidities are high year-round along the coast, but inland areas can be extremely dry. Only mountain locations receive significant yearly accumulations of rainfall (over 10 inches). Some Peruvian coastal locations receive precipitation regularly, but it is usually very light drizzle falling from low clouds, and annual accumulations are quite small. Thunderstorms are rare except at some mountain locations. Surface winds are usually southerly, and can become strong enough to raise dust during the afternoon. Valley winds in the mountains can reach gale force at times.

2. FLYING WEATHER. Generally very good except for early morning coastal cloudiness. During the winter ceiling/visibility less than 5000 feet and/or 6 miles occurs 70-100 percent of the time during the early morning along the coasts. Summer values range from 15-30 percent during the morning to 3-12 percent during the afternoon. Inland desert areas generally do not have significant cloudiness. Cloud ceiling height data for mountain areas are not available. Ceiling/visibility less than 1500 feet/3 miles occurs as often as 75 percent of the time during the winter along the Peruvian coast, but is infrequent elsewhere. Conditions less than 500/1 are generally rare, occurring 2-3 percent of the time during the summer. Turbulence over the mountains is usually not a problem, but thermal turbulence over the desert extends as high as 10,000 feet on hot afternoons.

3. RECONNAISSANCE WEATHER. Generally good to excellent except for coastal areas where it is generally poor, especially during the morning. Mountain locations frequently have poor reconnaissance weather during summer afternoons. The average number of days per month with cloud cover 2/8 or less and visibility 3 miles or greater ranges from near zero at some coastal and mountain locations to 20-30 days at inland desert locations.

4. TERMINAL WEATHER. Lima/Jorge Chavez, Peru. Fair. Ceilings less than 1500 feet occur as often as 75 percent of the time, but conditions less than 300/1 are rare. Thunderstorms seldom occur. Runway crosswinds greater than 15 knots are rare.

TERMINAL WEATHER. La Serena/La Florida, Chile. Fair to good. Fog restricts the visibility to less than 1 mile on 2-4 days per month. Thunderstorms and runway crosswinds greater than 15 knots are both rare.

5. EXPOSURE WEATHER. Coastal weather is cool, cloudy, and humid. The interior desert is warm and dry, occasionally hot. Mountain locations at high elevations can be bitterly cold during the winter.

<u>LA SERENA, CHILE (COASTAL)</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
TEMPERATURE (F)						
Absolute Maximum	81	82	85	78	75	76
Mean Maximum	73	73	71	66	64	62
Mean Minimum	59	59	56	53	50	47
Absolute Minimum	49	50	44	37	39	37
MEAN PRECIPITATION (INCHES)	*	0.1	0.1	0.1	1.0	1.0
MEAN NUMBER OF DAYS						
Precipitation	*	*	1	1	2	3
Thunderstorms	0	0	0	0	0	0
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	74	75	79	78	77	78
Mean Maximum	60	61	63	65	67	70
Mean Minimum	47	47	49	51	53	56
Absolute Minimum	37	35	37	39	44	46
MEAN PRECIPITATION (INCHES)	0.8	0.6	0.2	0.1	*	*
MEAN NUMBER DAYS						
Precipitation	3	3	2	2	1	1
Thunderstorms	*	*	0	*	0	0

* = less than 0.5 day or 0.05 inch

<u>PICA, CHILE (DESERT)</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
TEMPERATURE (F)						
Absolute Maximum	94	94	91	89	88	88
Mean Maximum	87	86	85	83	81	78
Mean Minimum	54	55	54	51	49	46
Absolute Minimum	45	50	46	44	38	35
MEAN PRECIPITATION (INCHES)	0.0	*	0.0	0.0	0.0	0.0
MEAN NUMBER DAYS						
Precipitation	0	*	0	0	0	0
Thunderstorms	0	0	0	0	0	0
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	86	87	90	91	94	92
Mean Maximum	79	81	84	87	87	86
Mean Minimum	47	46	48	49	50	52
Absolute Minimum	36	30	38	38	41	45
MEAN PRECIPITATION (INCHES)	0	*	0.1	0	0	0.0
MEAN NUMBER DAYS						
Precipitation	0	*	*	0	0	0
Thunderstorms	0	0	0	0	0	0

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Fair to poor along the coast. San Juan De Marcona, Peru has suitable conditions as little as 3 percent of the time during the winter months. Conditions are usually more favorable on the Chilean coast than on the Peruvian coast. Desert areas are usually good except for gusty afternoon surface winds.

7. ASTRONOMICAL DATA. Cerro Moreno (Antofagasta), Chile. (Date as of the 15th/
local standard time)

CIVIL TWILIGHT

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0544	0605	0621	0632	0644	0657
Last Light	1959	1945	1921	1851	1832	1828
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0659	0644	0616	0546	0525	0524
Last Light	1837	1848	1858	1909	1928	1950

(Prepared: 28 February 1980)

SITUATION CLIMATIC BRIEF

COLOMBIA

ANNUAL

1. GENERAL. The weather is cloudy with abundant precipitation year-round. The only exception is the Caribbean coast province of La Guajira, which is arid. The lowlands are hot and humid, but the mountains are cool. Mean cloudiness ranges from about 60 percent to nearly 100 percent. Mean daily maximum temperatures in the lowlands are in the upper 80's (F) to lower 90's; minimums are in the 70's. The mountains have maximums in the upper 60's and lower 70's and minimums in the 40's. Rainfall on the Pacific slopes of the Andes is extremely heavy; annual amounts range between 250 and 400 inches. Mountain locations receive between 30 and 70 inches annually. Thunderstorms occur sporadically year-round with peak occurrence from August through October when the intertropical convergence zone traverses the country. Winds of 17 knots or greater occur less than 1 percent of the time; gale force winds are rare.

2. FLYING WEATHER. Poor on the Pacific slopes of the Andes and fair to poor over the remainder of Colombia. The mountains are frequently cloud-enshrouded and visibility is low. Ceiling/visibility less than 5000 feet and/or 6 miles occurs approximately 35-55 percent of the time; less than 1500 feet/3 miles, 10-20 percent; and less than 500/1, 5-12 percent. Ceilings tend to be lowest in the middle of the day. Thunderstorms may be numerous at times and the likelihood of aircraft icing above 15,000 feet is high.

3. RECONNAISSANCE WEATHER. Very poor all year in Colombia except for a brief winter dry season on the Caribbean coast.

4. TERMINAL WEATHER. Bogota/Eldorado International, Colombia. Generally fair. Conditions are cloudy and foggy with frequent moderate rain. Thunderstorms are infrequent except during October and November. Conditions less than 300/1 occur about 3-5 percent of the time. During the early afternoon runway crosswinds greater than 15 knots occur 1-4 percent of the time.

5. EXPOSURE WEATHER. The lowlands are cloudy, hot, and humid with frequent heavy rainfall. The mountains are cool, cloudy, and damp.

<u>BOGOTA, COLOMBIA</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	77	77	76	75	76	73
Mean Maximum	69	69	69	68	68	67
Mean Minimum	45	46	47	49	49	48
Absolute Minimum	33	21	36	34	41	40
<u>MEAN PRECIPITATION (INCHES)</u>	1.7	2.2	3.2	3.7	3.7	2.4
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	9	12	13	21	20	17
Thunderstorms	1	1	2	3	1	1

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	73	74	75	74	74	74
Mean Maximum	67	67	68	68	68	69
Mean Minimum	48	47	46	48	47	45
Absolute Minimum	33	38	35	36	33	35
MEAN PRECIPITATION (INCHES)	2.1	1.7	2.6	4.5	5.9	3.2
MEAN NUMBER OF DAYS						
Precipitation	17	15	14	20	18	13
Thunderstorms	1	0	1	7	4	2

6. PARADROP WEATHER. Generally good. Conditions are favorable 70-95 percent of the time.

7. ASTRONOMICAL DATA. Bogota, Colombia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0547	0550	0542	0529	0521	0522
Last Light	1825	1831	1829	1824	1825	1831
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0529	0531	0527	0521	0522	0534
Last Light	1836	1831	1817	1804	1800	1810

(Prepared: 22 January 1979)

SITUATION CLIMATIC BRIEF

COSTA RICA

DECEMBER-APRIL

1. GENERAL. The weather ranges from dry and windy in the mountains and western Costa Rica to cloudy with moderate to heavy rainfall on the Caribbean or eastern side of the mountains. Rainfall averages 1 inch or less in the mountains and Pacific coast region and 5-22 inches on the eastern side. Thunderstorms are expected on 1-3 days per month. Occasional outbreaks of cold air from North America bring below-normal temperatures and fresh breezes. Normal temperatures average in the mid 60's to low 70's (F) in the morning hours and in the mid 80's to low 90's in the afternoon. Isolated mountain locations may be slightly cooler. High winds occur in the mountain regions during all months.

2. FLYING WEATHER. Generally good. The mountains and western Costa Rica generally have clear to partly cloudy skies. Flying may be restricted in eastern Costa Rica due to heavy cloudiness and moderate to heavy rain showers. At San Jose/El Coco International the percentage frequency of a ceiling/visibility less than 5000 feet and/or 6 miles is approximately 5 percent and less than 1500 feet/3 miles is approximately 1 percent.

3. RECONNAISSANCE WEATHER. Generally good except in eastern Costa Rica. Sky cover less than 3/8 occurs 50-60 percent of the time in the mountains and western regions. Visibility is rarely below 3 miles. On the eastern coast the weather is favorable on only 1-5 days per month. The afternoon hours are generally the least favorable.

4. TERMINAL WEATHER. San Jose/El Coco International, Costa Rica. Warm and windy with clear to partly cloudy skies 45-75 percent of the time. Cloudiness increases in April as the rainy season approaches. Rainfall is expected on only 1-2 days per month during the driest months. The ceiling/visibility is less than 300/1 less than 1 percent of the time. Fog is rare but visibility occasionally is restricted by haze and/or smoke. Winds greater than 16 knots occur 50-65 percent of the time; gale force, 5-10 percent. Runway crosswinds greater than 15 knots are expected 15-20 percent of the time.

5. EXPOSURE WEATHER. Warm and dry in the mountains and western coast to warm and rainy on the eastern side of the mountains.

<u>SAN JOSE/EL COCO</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
<u>TEMPERATURE (F)</u>					
Absolute Maximum	87	87	88	91	89
Mean Maximum	75	75	76	79	79
Mean Minimum	58	58	58	59	62
Absolute Minimum	49	49	51	50	53
<u>MEAN PRECIPITATION (INCHES)</u>	1.3	0.2	0.6	0.6	1.7
<u>MEAN NUMBER OF DAYS</u>					
Precipitation	7	1	2	2	6
Thunderstorms	0	*	*	1	3

* = less than 0.5 day

6. PARADROP WEATHER. Unfavorable due to high winds in the mountains and rainfall on the eastern coast. The weather is favorable in the San Jose area 10-25 percent of the time. The primary weather restriction is the strong gusty wind in the San Jose area.

7. ASTRONOMICAL DATA. San Jose/El Coco, Costa Rica. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0522	0535	0535	0523	0505
Last Light	1741	1757	1807	1808	1808

(Prepared: 22 January 1979)

MAY - NOVEMBER

1. GENERAL. This is the rainy season with heavy cloudiness, warm temperatures, and moderate to heavy rain over all of the country. Mean rainfall averages 10-26 inches per month at most locations. Thunderstorms are expected on 5-10 days per month. Skies are clear less than 5 percent of the time; partly cloudy to cloudy, 40-55 percent; and overcast, 50-60 percent. There is a general improvement in the weather in November as the dry season approaches.

2. FLYING WEATHER. Poor to fair due to heavy cloudiness and rainfall. The percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles ranges from 10 to 25 percent; less than 1500/3, 5 to 10 percent. Numerous thunderstorms can be expected over all of Costa Rica.

3. RECONNAISSANCE WEATHER. On the average, only 1 day per month is favorable due to heavy cloudiness. At San Jose the percentage frequency that the cloud cover is 2/8 or less is 5 to 10 percent.

4. TERMINAL WEATHER. San Jose/El Coco International, Costa Rica. Warm, cloudy, windy, and rainy. The skies are clear less than 5 percent of the time; partly cloudy, 10-20 percent; cloudy, 25-30 percent; and overcast, 40-60 percent. However, the ceiling/visibility is less than 300/1 only 2 percent of the time. Winds are greater than 16 knots 5-25 percent of the time; they reach their maximum frequency in July and their minimum in September-October. Gale force winds are expected less than 1 percent of the time.

5. EXPOSURE WEATHER. Warm and rainy with moderate to heavy showers and thunderstorms. Warm temperatures and high humidity can be debilitating to personnel and can cause equipment failures.

<u>SAN JOSE/EL COCO</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>							
Absolute Maximum	88	92	84	85	86	85	84
Mean Maximum	80	79	77	78	79	77	77
Mean Minimum	62	62	62	61	61	60	60
Absolute Minimum	54	56	54	56	56	55	52
<u>MEAN PRECIPITATION (INCHES)</u>	9.3	9.6	7.6	7.4	12.4	14.0	4.8
<u>MEAN NUMBER OF DAYS</u>							
Precipitation	18	21	23	23	26	26	15
Thunderstorms	7	5	5	5	8	6	1

6. PARADROP WEATHER. Generally poor due to heavy cloudiness, rainfall, and winds in excess of 13 knots. At San Jose/El Coco the percentage frequency of favorable weather ranges from 40 to 55 percent; generally, the night hours from 1800-0600 local are the most favorable. The weather is poorer east of the mountains because of even greater cloud cover and more frequent shower activity.

7. ASTRONOMICAL DATA. San Jose/El Coco, Costa Rica. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0453	0453	0500	0506	0505	0504	0509
Last Light	1812	1821	1824	1816	1758	1741	1733

(Prepared: 15 November 1979)

SITUATION CLIMATIC BRIEF

CUBA

NOVEMBER - APRIL

1. GENERAL. The weather is dominated by persistent trade winds during the dry season. Wind speeds average 5-15 knots with afternoon gusts. Temperatures are warm, from the mid 60's to upper 70's (F), with slightly cooler temperatures in the mountains. Skies are partly cloudy most of the time. Mean rainfall amounts are generally less than 4 inches per month; an exception occurs along the north-eastern coast of Cuba where monthly averages range as high as 15 inches. Rainfall occurs on 9-16 days in this wet area, whereas only 3-8 days over the rest of Cuba. Thunderstorms are infrequent. Tropical cyclones and/or hurricanes are still possible in November, but otherwise rare during this period.

2. FLYING WEATHER. Generally fair to good along the coast decreasing to poor over the mountains. The percentage frequency of ceiling/visibility less than 5000 feet and/or 6 miles average 10-15 percent; less than 1500 feet/3 miles, 0-15 percent. Thunderstorms are infrequent during the dry season.

3. RECONNAISSANCE WEATHER. Generally fair to poor. The variation in mean cloudiness over Cuba is more pronounced from place to place and diurnally than it is from month to month. The sky is seldom completely clear or overcast. Maximum cloudiness is generally observed during the afternoon hours. The percentage frequency of sky cover 2/8 or less and visibility 3 miles or greater for daylight operations ranges from 5 to 65 percent; nighttime, 35 to 80 percent.

4. TERMINAL WEATHER. Havana, Cuba. General daytime cloudiness and thunderstorm activity during this period. The percentage frequency of ceiling/visibility less than 300/1 is less than 1 percent. Runway crosswinds in excess of 15 knots occur less than 1 percent of the time. Gusty surface winds in excess of 16 knots are expected less than 1 percent of the time, primarily in the afternoon hours. Gale force winds are rare.

5. EXPOSURE WEATHER. The dry-season climate is mild with warm temperatures, decreasing rainfall, and only slight discomfort from the relative humidity.

<u>HAVANA, CUBA</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	93	90	93	93	104	104
Mean Maximum	81	79	79	79	81	84
Mean Minimum	69	67	65	65	67	69
Absolute Minimum	45	45	43	46	46	43
MEAN PRECIPITATION (INCHES)	3.1	2.3	2.8	1.8	1.8	2.3
MEAN NUMBER OF DAYS						
Precipitation	5	4	6	3	4	5
Thunderstorms	*	*	*	1	1	2

* = less than 0.5 day

6. PARADROP WEATHER. Generally good, except during the afternoon when conditions are favorable 40-70 percent of the time due to surface winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Havana, Cuba. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0620	0638	0648	0640	0618	0546
Last Light	1809	1811	1828	1848	1901	1914

(Prepared: 19 May 1980)

MAY - OCTOBER

1. GENERAL. The rainy season in Cuba is characterized by partly cloudy to cloudy skies, warm temperatures, and frequent rainfall. Mean cloudiness ranges from about 45 to 75 percent, with the afternoon being the cloudiest time of the day. Mean maximum temperatures are in the 80's to low 90's (F) and mean minimums range from the 60's to low 70's. Precipitation, mainly in showers, occurs on 8-17 days per month with average peak amounts (4-10 inches) occurring at the beginning and at the end of the season. Some western locales receive up to 15 or more inches due particularly to the damaging, torrential rains and strong winds produced by tropical storms and hurricanes. These storms traverse the island on an average of 3 per year with the highest incidence occurring in late summer and early autumn. Surface winds are generally easterly and average 5-15 knots with the maximum speeds occurring in the afternoon.

2. FLYING WEATHER. Generally good, except that poor conditions may occur for short durations with intense afternoon and evening thunderstorms. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-40 percent of the time; 1500 feet/3 miles, 1-5 percent; and less than 500/1 rarely occurs. Turbulence is a frequent hazard over mountain ridges and over flat terrain on hot summer days. Thunderstorms occur on 1-20 days per month, with the highest incidence occurring from June through September at windward mountain localities.

3. RECONNAISSANCE WEATHER. Poor throughout the island during the late morning to late evening. Otherwise, conditions range from fair to good during the late night and early morning. Sky cover of 2/8 or less and/or visibility of 3 miles or greater occurs on 5-20 days per month.

4. TERMINAL WEATHER. Havana, Cuba. Generally good, except that flying operations can be restricted due to runway crosswinds and intense shower activity in the afternoon to early evening. Ceiling/visibility less than 300/1 occurs 1 percent of the time or less. Runway crosswinds greater than 15 knots occur as often as 20-35 percent of the time during the afternoon and early evening.

5. EXPOSURE WEATHER. Temperatures and humidities are high.

<u>HAVANA, CUBA</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	97	99	97	95	100	100
Mean Maximum	86	88	89	89	88	85
Mean Minimum	72	74	75	75	75	73
Absolute Minimum	57	63	64	63	63	52
<u>MEAN PRECIPITATION (INCHES)</u>	3.7	5.7	4.3	4.3	5.7	7.3
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	8	12	12	14	3	12
Thunderstorms	7	12	12	14	11	6

6. PARADROP WEATHER. Favorable 45-90 percent of the time. The least favorable time is in the afternoon to early evening due to winds in excess of 13 knots and rain shower activity.

7. ASTRONOMICAL DATA. Havana, Cuba. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0524	0518	0528	0542	0553	0604
Last Light	1928	1941	1943	1925	1856	1827

(Prepared: 19 August 1980)

SITUATION CLIMATIC BRIEF

ECUADOR

ANNUAL

1. GENERAL. Ecuador has extensive cloudiness, warm temperatures, and contrasting rainfall. Mean cloudiness ranges from 75 to 100 percent. Windward exposures (northeast to southeast) in the Andes Mountains are cloudy with heavy rain, while leeward locations are relatively cloudfree and semiarid. Mean daily temperatures range from minimums of 65F to 70F to maximums of 80F to 90F. Temperatures in the mountains frequently drop below freezing. Rainfall is abundant throughout the year, although the southern coast is arid. Thunderstorms are relatively uncommon; however, they are locally numerous at a few locations.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-95 percent of the time; less than 1500/3 and 500/1 occur much less frequently except on the eastern slopes of the Andes where cloud ceilings commonly touch the ground. Dense cloudiness, heavy rainfall, and turbulence, especially over the mountains, make conditions poor.

3. RECONNAISSANCE WEATHER. Very poor. Sky cover of 2/8 or less usually occurs less than 10 days per month and frequently less than 5 days per month.

4. TERMINAL WEATHER. Quito/Mariscal Sucre. Good. Conditions are usually cloudy, but low ceilings are uncommon. Rain showers and thunderstorms are frequent except during July and August. Ceiling/visibility less than 300/1 is rare. Surface winds occasionally become gusty during the mid to late afternoon, especially during the less cloudy months of July and August.

5. EXPOSURE WEATHER. Conditions are cloudy, warm, and humid with frequent heavy rain in most lowland areas. Cloudy, cool, and damp in the mountains.

<u>QUITO, ECUADOR</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
TEMPERATURE (F)						
Absolute Maximum	81	79	78	78	81	78
Mean Maximum	70	69	69	69	69	70
Mean Minimum	46	47	47	47	47	45
Absolute Minimum	32	34	34	38	35	35
MEAN PRECIPITATION (INCHES)	4.9	5.3	6.2	7.1	5.1	2.0
MEAN NUMBER OF DAYS						
Precipitation	17	17	20	22	19	11
Thunderstorms	3	3	5	6	5	2
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	79	82	83	86	81	81
Mean Maximum	70	72	72	71	70	70
Mean Minimum	44	44	45	47	46	46
Absolute Minimum	32	34	35	32	32	33
MEAN PRECIPITATION (INCHES)	0.7	0.9	3.2	5.2	4.4	4.2
MEAN NUMBER OF DAYS						
Precipitation	6	6	13	19	16	16
Thunderstorms	1	2	5	7	3	3

6. PARADROP WEATHER. Good at Quito except for occasional gusty winds during midafternoon. Conditions are suitable for paraproducts 35-55 percent of the time during midafternoon, and 70-95 percent at other hours.

7. ASTRONOMICAL DATA. Quito/Mariscal Sucre. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0557	0603	0559	0550	0545	0548
Last Light	1849	1853	1847	1838	1835	1840
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0554	0554	0545	0535	0533	0543
Last Light	1845	1843	1833	1824	1824	1836

(Prepared: 6 June 1979)

SITUATION CLIMATIC BRIEF

EL SALVADOR

NOVEMBER - APRIL

1. GENERAL. The weather is hot and dry with clear to partly cloudy skies. The skies are clear 10-35 percent, partly cloudy 45-50 percent, cloudy 20-40 percent, and overcast 1-5 percent of the time. Rain occurs on 1-5 days per month and is usually associated with a thunderstorm. The visibility is obstructed 5-15 percent from November through March and 40 percent of the time in April. The primary restrictions to visibility are haze/smoke and dust. Gusty surface winds in excess of 16 knots are expected 5 percent of the time; gale force winds are rare. Tropical cyclones and/or hurricanes are rare during this period.

2. FLYING WEATHER. Generally good. The percentage frequency of ceiling/visibility less than 5000 feet and/or 6 miles is 5-10 percent from November through March and 25 percent in April; less than 1500 feet/3 miles, 1-2 percent; and less than 500/1 is rare. Flying activities in the highlands can be restricted for short periods by early morning fog.

3. RECONNAISSANCE WEATHER. Generally good. The percentage frequency that the sky cover is 2/8 or less and the visibility is 3 miles or greater ranges from 30 to 65 percent. Cloudiness generally increases in April.

4. TERMINAL WEATHER. San Salvador, El Salvador. Hot and dry. Ceiling/visibility below 300/1 is rare. Precipitation is expected on 1-5 days per month and is usually associated with a thunderstorm. The visibility is obstructed 5-10 percent from November through February, 15 percent in March, and 40 percent in April. Primary restrictions are haze/smoke and dust. Visibility rarely goes below 3 miles. Runway crosswinds in excess of 15 knots are expected approximately 1-2 percent of the time; gusty surface winds in excess of 16 knots, 5 percent; gale force winds are rare.

5. EXPOSURE WEATHER. Hot and dry with little rainfall.

<u>SAN SALVADOR, EL SALVADOR</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	102	101	101	103	105	104
Mean Maximum	87	89	90	92	94	93
Mean Minimum	63	61	60	60	62	65
Absolute Minimum	49	47	45	49	45	54
<u>MEAN PRECIPITATION (INCHES)</u>	1.6	0.4	0.2	0.2	0.4	2.1
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	5	1	1	1	1	5
Thunderstorms	5	1	1	1	5	5

6. PARADROP WEATHER. Generally good. Weather conditions are favorable 65-95 percent of the time. Weather conditions are unfavorable due primarily to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. San Salvador, El Salvador. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0534	0549	0601	0558	0543	0522
Last Light	1748	1755	1811	1823	1828	1831

(Prepared: 8 June 1979)

MAY - OCTOBER

1. GENERAL. The weather is warm and cloudy with heavy rainfall and an occasional tropical storm or hurricane. The skies are clear 1-3 percent; partly cloudy, 15-35 percent; cloudy, 50-70 percent; and overcast, 10-20 percent of the time. Rain occurs on 10-25 days per month and is usually associated with a thunderstorm. Gusty surface winds in excess of 16 knots are expected less than 1 percent of the time; gale force winds are rare. The monthly probability of a tropical cyclone and/or hurricane affecting the El Salvador weather ranges from 15 percent in May through July to 30 percent from August through October.

2. FLYING WEATHER. Fair to poor. The percentage frequency of ceiling/visibility less than 5000 feet and/or 6 miles is 10-25 percent; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 1-2 percent. Thunderstorms are numerous and rainfall very heavy at times. Heavy rain showers and early morning fog can restrict flying activities.

3. RECONNAISSANCE WEATHER. Generally poor. The percentage frequency that the sky cover is equal to or less than 2/8 and the visibility is 3 miles or greater ranges from 5 to 15 percent. Aerial reconnaissance is poor during all hours of the day due to thick cloudiness and moderate to heavy rain showers.

4. TERMINAL WEATHER. San Salvador, El Salvador. Warm and cloudy with numerous thunderstorms and heavy rain showers. The percentage frequency that the ceiling/visibility is less than 300/1 is 1-2 percent. Runway crosswinds in excess of 15 knots are expected approximately 1 percent of the time; gusty surface winds in excess of 16 knots, less than 1 percent; gale force winds are rare. During May visibility is obstructed 30 percent of the time due to haze/smoke, dust, and early morning fog. During other months visibility is obstructed 5-10 percent due primarily to haze/smoke and early morning fog.

5. EXPOSURE WEATHER. Hot, humid, and rainy over all of El Salvador. Thunderstorms are numerous.

<u>SAN SALVADOR, EL SALVADOR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	103	98	98	98	99	101
Mean Maximum	91	87	89	89	87	87
Mean Minimum	67	66	65	66	66	65
Absolute Minimum	53	56	58	60	53	54
MEAN PRECIPITATION (INCHES)	7.4	12.7	12.5	11.7	12.5	9.0
MEAN NUMBER OF DAYS						
Precipitation	13	20	22	21	21	16
Thunderstorms	13	17	18	18	18	10

6. PARADROP WEATHER. Favorable 60-95 percent of the time. The hours from 0600-1800 are generally the most favorable. Heavy cloudiness and rainfall cause the unfavorable paradrop conditions.

7. ASTRONOMICAL DATA. San Salvador, El Salvador. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0507	0505	0513	0521	0524	0526
Last Light	1838	1848	1851	1840	1819	1759

(Prepared: 14 September 1979)

SITUATION CLIMATIC BRIEF

GUATEMALA

NOVEMBER - APRIL

1. GENERAL. The dry season in Guatemala is characterized by partly cloudy skies, and warm to hot temperatures. Precipitation is infrequent except in the northern lowlands and the Caribbean slopes of the mountains. These locations record minimum precipitation amounts at this time of year, but do not undergo the very dry conditions that occur in the interior and on the Pacific mountain slopes. Morning fog is a frequent occurrence in the interior highlands and valleys. Temperatures in the lowlands range from morning lows of 65-75F to afternoon highs of 80-90F. The interior highlands have lows in the mid 50's and highs of 75-80F. A few very high elevations have lows of 35-40F and highs of 65-70 (F). Subfreezing temperatures are not uncommon at elevations above 7000 feet. On the Pacific mountain slopes and in the interior highlands precipitation occurs on 0-3 days per month. Snow occurs infrequently and is confined to the highest mountain peaks. Thunderstorms are uncommon. The Caribbean mountain slopes and northern lowlands have 3-20 days per month with rainfall; the greatest amount occurs on the mountain slopes. Thunderstorms are infrequent. Mid-latitude cold fronts occasionally penetrate as far south as Guatemala bringing strong, gusty, northerly winds, and a day or two of cloudy skies and rain. Tropical storms or hurricanes are still possible on the Caribbean coast during November.

2. FLYING WEATHER. Generally good except in the Caribbean lowlands and mountain slopes, and along the Pacific coast in the latter part of the dry season. Along the Pacific coast the weather begins to deteriorate in February, and by April the ceiling/visibility is less than 5000 feet and/or 6 miles as often as 90 percent of the time; elsewhere, less than 5000 feet/6 miles occurs 20-40 percent. On the interior plateau conditions less than 1500/3 occur as often as 60 percent of the time around sunrise due to fog; and less than 500/1 as often as 15 percent.

3. RECONNAISSANCE WEATHER. Generally poor to fair. Conditions during the afternoon over the interior plateau are usually good. From November through January conditions are good on the Pacific coast, but deteriorate after that. The Caribbean lowlands and mountain slopes have few days favorable for reconnaissance.

4. TERMINAL WEATHER. Guatemala City/La Aurora Airport. Generally good except for early morning fog. Ceiling/visibility less than 300/1 can occur as often as 12 percent of the time around sunrise. Thunderstorms are infrequent. Runway crosswinds greater than 15 knots occur less than 1 percent of the time.

5. EXPOSURE WEATHER. The interior plateau is cool at night, occasionally even cold, but afternoons are warm. The Pacific lowlands are hot and humid, but receive little rainfall until April. The Caribbean lowlands are hot and humid with frequent rainfall.

<u>GUATEMALA CITY</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)						
Absolute Maximum	86	84	86	89	92	91
Mean Maximum	73	74	75	77	80	82
Mean Minimum	55	54	53	53	56	58
Absolute Minimum	45	41	42	41	45	47
MEAN PRECIPITATION (INCHES)	0.8	0.4	0.1	*	0.3	0.7
MEAN NUMBER OF DAYS						
Precipitation	3	2	1	1	4	3
Thunderstorms	1	*	*	*	1	2

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Poor on the interior plateau due to morning fog and winds in excess of 13 knots. The Caribbean lowlands have marginal weather due to rainfall. The Pacific coast has good weather until March and April when it becomes marginal due to rainfall.

7. ASTRONOMICAL DATA. Guatemala City/La Aurora Airport. (Date as of the 15th/ local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0540	0556	0608	0604	0549	0527
Last Light	1753	1759	1815	1828	1834	1838

(Prepared: 14 September 1979)

MAY - OCTOBER

1. GENERAL. This season is characterized by mostly cloudy skies, warm to hot temperatures, and frequent rain shower and thunderstorm activity. Temperatures below about 3000 feet and at coastal locations fall to the mid to upper 70's (F) at night, and rise to the upper 80's and lower 90's during the afternoon. The elevated interior plateau is cooler; morning temperatures are 55-60F and afternoon temperatures are 70-80F. Rainfall on seaward-facing mountain slopes and at lower elevations is very heavy, but on the interior plateau amounts are usually moderate. Most rain falls as brief showers, but a phenomenon called the temporal can cause 12 hours to 6 days of low ceilings and visibilities and nearly continuous moderate to heavy rain. Thunderstorms occur in the lowlands on 8-14 days per month. Exposed mountain slopes probably receive considerably higher frequencies than this. The interior plateau has thunderstorms on 2-8 days per month. Both the lowlands and the interior plateau have a maximum of thunderstorms during the midafternoon. Coastal locations experience a secondary maximum between midnight and sunrise. At times the thunderstorms are very intense, with strong gusty winds and severe lightning. The eastern and northern parts of Guatemala are subject to the effects of infrequent tropical storms or hurricanes between May and October, with the greatest likelihood in October.

2. FLYING WEATHER. Poor to fair due to heavy cloud cover, rain, and thunderstorms. Cloud-enshrouded mountain slopes present a particular hazard to aircraft operations. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-85 percent of the time. The Pacific coast is particularly cloudy during May, but improves greatly during June and July. Conditions less than 1500 feet/3 miles occur 5-40 percent; less than 500/1, 1-6 percent.

3. RECONNAISSANCE WEATHER. Very poor due to heavy cloud cover and morning fog. No part of the country or time of day has favorable reconnaissance conditions, but the best chance occurs during the evening.

4. TERMINAL WEATHER. Guatemala City/La Aurora Airport. Fair to good. Early morning fog may frequently restrict flying activities. Ceiling/visibility less than 300/1 occurs 1-3 percent of the time. Thunderstorm activity occurs most frequently from the midafternoon to early evening hours. Crosswinds greater than 15 knots are infrequent, occurring less than 1 percent of the time.

5. EXPOSURE WEATHER. Hot and humid with frequent heavy rainfall on the coastal lowlands and seaward-facing mountain slopes. The interior plateau has cool nights, warm days, and lighter rainfall.

<u>GUATEMALA CITY</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)						
Absolute Maximum	90	89	83	88	88	84
Mean Maximum	80	76	76	77	76	74
Mean Minimum	60	60	59	59	59	58
Absolute Minimum	49	54	50	53	52	46
MEAN PRECIPITATION (INCHES)	9.2	10.1	8.0	7.4	10.4	6.0
MEAN NUMBER OF DAYS						
Precipitation	11	21	16	20	22	10
Thunderstorms	4	7	5	8	6	2

6. PARADROP WEATHER. Poor to fair due to low clouds and rainfall. The best conditions occur in the late morning and early afternoon when conditions may be favorable 60-85 percent of the time.

7. ASTRONOMICAL DATA. Guatemala City/La Aurora Airport. (Date as of the 15th/ local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0512	0509	0517	0526	0529	0532
Last Light	1845	1856	1958	1847	1825	1804

(Prepared: 1 July 1980)

SITUATION CLIMATIC BRIEF

GUYANA

DECEMBER - FEBRUARY

1. GENERAL. Winters are cloudy, warm to hot, and humid. The northern lowlands are slightly cooler and drier than other parts of the country during this season. Mean cloud cover varies from 35-80 percent. Mean daily minimum temperatures range from 66F to 76F. Maximums range from 83F to 93F. The average relative humidity is near 85 percent. Precipitation, usually rain showers, occurs on 10-25 days per month. Thunderstorm frequency is lowest during this season; however, thunderstorms are still likely during the afternoon, especially over inland sections. Gale force winds (28 knots or greater) are rare with the exception of those produced by thunderstorms.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-35 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, about 8 percent. Flying weather is favorable over the northern lowlands and Atlantic coast, but the western mountainous regions usually experience more low cloudiness and rain showers/thunderstorms. Turbulence is a common flight hazard due to the intense surface heating.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur about 8 days a month. Early evening conditions are slightly better.

4. TERMINAL WEATHER. Georgetown, Guyana. Good. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time. Occasionally, early morning clouds which move inland from the Atlantic and afternoon rain showers cause terminal conditions to be poor.

5. EXPOSURE WEATHER. Winters are warm to hot and somewhat uncomfortable for those who work outdoors for extended periods of time. Relative humidity varies from 55-95 percent with a slight decreasing trend throughout the winter.

<u>GEORGETOWN, GUYANA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	89	88	89
Mean Maximum	84	84	84
Mean Minimum	75	74	74
Absolute Minimum	70	68	69
<u>MEAN PRECIPITATION (INCHES)</u>	11.3	7.3	5.9
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	20	18	16
Thunderstorms	2	1	0

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 60-95 percent of the time; however, early afternoon hours are the least favorable due to rain shower activity and its associated cloudiness.

7. ASTRONOMICAL DATA. Georgetown, Guyana. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0548	0602	0603
Last Light	1818	1833	1841

(Prepared: 1 July 1981)

MARCH - MAY

1. GENERAL. Spring is cloudy, hot, and humid with frequent early afternoon rain showers. Mean cloud cover varies from 33-86 percent. Mean daily minimum temperatures range from 66F to 75F. Maximums range from 84F to 93F. High relative humidity, e.g., 85 percent, coupled with very warm temperatures can be quite oppressive. Precipitation, usually rain showers, occurs on 3-18 days a month. May, the wettest month with the most frequent precipitation, begins the rainy season. Thunderstorms are mainly confined to inland and mountainous areas. Gale force winds (28 knots or greater) are rare except those associated with thunderstorms.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-40 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, 5-10 percent. Flying conditions are better in March and April than in May due to more rain showers and thunderstorms in May. Turbulence is a common flight hazard in the vicinity of thunderstorms and over inland and mountainous regions subject to intense heating.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs 5-15 days a month.

4. TERMINAL WEATHER. Georgetown, Guyana. Good. Ceiling/visibility less than 300/1 occurs 3-10 percent of the time. Terminal weather may be poor for brief periods during the afternoon due to increased rain shower and thunderstorm activity.

5. EXPOSURE WEATHER. Hot both day and night with relative humidity ranging from 54-94 percent.

<u>GEORGETOWN, GUYANA</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	89	89	90
Mean Maximum	84	85	85
Mean Minimum	75	76	75
Absolute Minimum	69	71	70
MEAN PRECIPITATION (INCHES)	6.1	6.7	11.1
MEAN NUMBER OF DAYS			
Precipitation	16	16	22
Thunderstorms	1	0	3

6. PARADROP WEATHER. Good. Conditions are favorable for paratroops 55-95 percent of the time; however, rain showers and heavy cloudiness in the afternoons can restrict paratroop operations.

7. ASTRONOMICAL DATA. Georgetown, Guyana. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0554	0539	0530
Last Light	1840	1837	1839

(Prepared: 1 July 1981)

JUNE - AUGUST

1. GENERAL. Summer is cloudy, hot, and humid with frequent rain showers and thunderstorms. Mean cloud cover varies from 35 to 85 percent. Mean daily minimum temperatures range from 68F to 75F. Maximums range from 84F to 94F. The relative humidity averages near 85 percent which makes uncomfortable operational conditions. Precipitation usually occurs as rain showers and occasionally causes flooding for many sections of Guyana. Thunderstorms are frequent for all months and at times become quite violent. Gale force winds (28 knots or greater) are rare, but can occur in association with thunderstorms.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-50 percent of the time; less than 1500/3, 5-30 percent; and less than 500/1, 3-10 percent. These frequencies are probably greater over mountainous areas. Good flying weather is most probable during the evening. Turbulence is a significant flight hazard in and near thunderstorms and in the vicinity of the Pakaraima and Kanuku Mountains.

3. RECOMMAISSANCE WEATHER. Fair. Weather conditions frequently deteriorate during afternoon hours due to rain shower and thunderstorm activity. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-15 days a month.

4. TERMINAL WEATHER. Georgetown, Guyana. Good. However, ceilings may occasionally lower for brief periods in the early morning hours due to low clouds forming over the Atlantic Ocean; ceilings/visibilities often lower during the afternoon as a result of thunderstorms and rain showers. Ceiling/visibility less than 300/1 occurs 2-8 percent of the time.

5. EXPOSURE WEATHER. Conditions during the summer are typically uncomfortable with hot days and nights, and relative humidity averaging near 85 percent. Personnel and equipment exposed to the outdoors can be adversely affected.

<u>GEORGETOWN, GUYANA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	88	90	90
Mean Maximum	85	85	86
Mean Minimum	75	75	75
Absolute Minimum	69	70	71
MEAN PRECIPITATION (INCHES)	12.1	9.6	6.4
MEAN NUMBER OF DAYS			
Precipitation	24	22	15
Thunderstorms	5	6	8

6. PARADROP WEATHER. Good. Conditions are usually favorable for paradrops 60-95 percent of the time. During the midday hours of June, paradrop conditions may be only fair due to rain showers and low ceilings/visibilities.

7. ASTRONOMICAL DATA. Georgetown, Guyana. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0531	0537	0541
Last Light	1846	1850	1844

(Prepared: 1 July 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumns are cloudy, hot, and humid. Mean cloud cover varies from 35-75 percent. Mean daily temperatures range from minimums of 68F to 76F to maximums of 87F to 97F. The average relative humidity is 80-85 percent. Precipitation, usually rain showers, occurs on 8-12 days per month. Thunderstorms are frequent during September and October, but become less frequent by November. Gale force winds are rare except near thunderstorms.

2. FLYING WEATHER. Fair during daylight hours due to extensive cloudiness and frequent rain showers. Good during the evening. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-40 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, 3-10 percent. The frequency of occurrence of these conditions is slightly greater over the mountains, especially in western Guyana. Turbulence is a frequent flight hazard near thunderstorms and over mountainous terrain in western and southwestern sections of Guyana.

3. RECONNAISSANCE WEATHER. Fair to poor. Conditions are poor at times in the mountains and northeastern lowlands due to low ceilings. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs 2-15 days a month.

4. TERMINAL WEATHER. Georgetown, Guyana. Generally good. Conditions may be poor in the early morning due to low clouds forming over the Atlantic and during the afternoon due to rain showers and thunderstorms. Ceiling/visibility less than 300/1 occurs 2-8 percent of the time.

5. EXPOSURE WEATHER. Autumns are usually hot and humid (55-95 percent) during the day and night. There is some relief from these conditions at elevations above 3500 feet in western Guyana. Equipment exposed to the outdoors can be adversely affected by the high temperatures and humidities.

<u>GEORGETOWN, GUYANA</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	91	92	91
Mean Maximum	87	87	86
Mean Minimum	76	76	75
Absolute Minimum	69	70	69
MEAN PRECIPITATION (INCHES)	2.8	2.3	5.8
MEAN NUMBER OF DAYS			
Precipitation	8	8	12
Thunderstorms	6	6	4

6. PARADROP WEATHER. Good. Conditions are favorable for paratroops 75-90 percent of the time over most of the country; but, may be only fair over the eastern slopes of the Pakaraima and Kanuku Mountains during early mornings and afternoons.

7. ASTRONOMICAL DATA. Georgetown, Guyana. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0538	0533	0536
Last Light	1829	1814	1809

(Prepared: 31 July 1979)

SITUATION CLIMATIC BRIEF

HONDURAS

NOVEMBER - APRIL

1. GENERAL. The weather during the dry season is characterized by partly cloudy skies, warm to hot temperatures, and infrequent rainfall. Exceptions are the eastern part of the country on the Caribbean Sea where the rainy season does not let up until December and the north coast on the Gulf of Honduras where stations receive their maximum rainfall at this time of year. Rain occurs on 5-20 days per month along the coasts of the Gulf of Honduras and the Caribbean Sea, and generally less than 5 days per month in the interior and on the Pacific coast. Mean cloudiness in these areas is about 55-75 percent and 30-50 percent, respectively. Minimum temperatures range from 55 to 75F, while maximum temperatures range from 70 to 85F. Pacific coast stations can be extremely hot with temperatures over 100F occurring daily. Thunderstorms occur on 2-6 days per month in November and December, but become infrequent after that. Surface winds are generally north to northeast at 8-15 knots. Mid-latitude cold fronts occasionally affect the north coast bringing a day or two of rain and strong northerly winds.

2. FLYING WEATHER. Usually good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-45 percent; less than 1500 feet/3 miles, 1-5 percent; less than 500/1, rarely. Aircraft icing can occur above the freezing level in the stratified cloudiness that occasionally forms along the north coast.

3. RECONNAISSANCE WEATHER. Generally poor along the Caribbean coast and fair elsewhere. Isolated locations in the mountains may have poor conditions, however, 2-10 days per month with favorable conditions is usual. Pacific coast locations may have 10-20 favorable days per month.

4. TERMINAL WEATHER. Tegucigalpa, Honduras. Good. Conditions less than 300/1 seldom occur. Morning fog is common, but seldom restricts the visibility significantly. Precipitation occurs on 2-9 days per month. Thunderstorms are rare except during April. Crosswinds greater than 15 knots occur 2-5 percent of the time.

5. EXPOSURE WEATHER. Warm days, cool nights, and partly cloudy skies are the rule in the mountains. Rainfall is infrequent. Elsewhere, low-lying coastal locations are hot and humid. Rainfall is frequent on the north coast.

<u>TEGUCIGALPA, HONDURAS</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	91	88	89	91	93	96
Mean Maximum	78	77	77	80	84	86
Mean Minimum	60	58	57	57	58	62
Absolute Minimum	48	47	39	43	46	48
<u>MEAN PRECIPITATION (INCHES)</u>	1.7	0.5	0.5	0.2	0.4	1.1
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	9	6	4	2	2	4
Thunderstorms	1	0	*	0	1	3

* = less than 0.5 day

6. PARADROP WEATHER. Usually good; however the early afternoon may be unsuitable 30-45 percent of the time due to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Tegucigalpa, Honduras. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0527	0542	0554	0551	0535	0514
Last Light	1740	1746	1803	1816	1821	1824

(Prepared: 31 July 1979)

MAY - OCTOBER

1. GENERAL. The weather during this season is characterized by mostly cloudy skies, hot temperatures, and frequent rain showers and thunderstorms. A general exception is the north coast on the Gulf of Honduras where some stations record the least amount of precipitation at this time of year. Precipitation amounts on the Caribbean coast can be very heavy, but are usually moderate in the interior. Precipitation occurs on 5-26 days per month. Mean cloudiness varies from 50-85 percent. Mean minimum temperatures range from the upper 60's to the upper 70's (F), depending upon elevation. Maximum temperatures range from the upper 80's to the lower 90's. The Pacific coast stations at low elevations are particularly hot. Thunderstorms occur on 4-24 days per month, with coastal stations recording the greater frequencies, as a general rule. Surface winds are usually northerly or northeasterly at 6-10 knots. Caribbean coastal areas are occasionally subjected to the effects of tropical storms or hurricanes.

2. FLYING WEATHER. Usually good except in the immediate vicinity of thunderstorms. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 25-45 percent; less than 1500 feet/3 miles, 5-10 percent; and less than 500/1, 1-6 percent of the time. Icing and turbulence are usually not a problem except near rain showers and thunderstorms. Early morning fog can be a problem at some mountain locations.

3. RECONNAISSANCE WEATHER. Usually poor due to extensive cloud cover. The mean number of days per month with cloud cover 2/8 or less and visibility 3 miles or greater ranges from 1-9 during the night to 0-5 during the midafternoon.

4. TERMINAL WEATHER. Tegucigalpa, Honduras. Generally good. Ceiling/visibility less than 300/1 rarely occurs. Fog forms on 14-22 mornings per month, but rarely restricts the visibility to less than 3 miles. Thunderstorms occur on 6-12 days per month, usually during the early evening. Crosswinds greater than 15 knots occur 1-3 percent of the time during the late afternoon and early evening.

5. EXPOSURE WEATHER. Warm, humid, and mostly cloudy in the mountains. Rain occurs on about one day in two, usually as an early evening shower or thunder-shower. The lowlands are cloudy, hot to very hot and humid with frequent heavy rainfall.

<u>TEGUCIGALPA, HONDURAS</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
<u>TEMPERATURE (F)</u>						
Absolute Maximum	94	90	89	91	90	88
Mean Maximum	85	82	81	83	83	80
Mean Minimum	64	65	64	63	63	63
Absolute Minimum	49	56	55	54	55	52
<u>MEAN PRECIPITATION (INCHES)</u>	5.7	6.3	3.5	3.9	7.2	5.4
<u>MEAN NUMBER OF DAYS</u>						
Precipitation	11	17	15	14	19	16
Thunderstorms	9	12	7	7	11	6

6. PARADROP WEATHER. Usually good. Conditions during the afternoon or early evening may be unfavorable 30-60 percent of the time due to rainfall or winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Tegucigalpa, Honduras. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0459	0457	0505	0513	0516	0518
Last Light	1831	1841	1844	1833	1812	1751

(Prepared: 15 August 1979)

SITUATION CLIMATIC BRIEF

MEXICO

OCTOBER - FEBRUARY

1. GENERAL. These two seasons, autumn and winter, are characterized by a general reduction in cloudiness and precipitation. Exceptions are the east coast which has about the same amount of cloudiness as during the summer months, and extreme northwestern and northeastern Mexico which show a slight increase in cloudiness compared to summer. Mean cloudiness ranges from 15-25 percent in northwestern Mexico to 55-65 percent along the east coast. The central plateau averages about 30-45 percent cloudiness. During the cooler months morning minimum temperatures in northern Mexico and on the central plateau are 35-40F; afternoon maximum temperatures are 55-70F. The southern parts of both coasts are warm to hot. Temperatures range from morning lows of 60-70F to afternoon highs of 80-90F. Rain falls on 5-15 days per month on the east coast and less than 1-4 days per month elsewhere. Snow occasionally falls on the central plateau and in northern Mexico, but is uncommon. Thunderstorms are also uncommon. Strong cold fronts, or northers often affect Mexico during the colder months. Northers are usually accompanied by strong northerly winds, widespread cloudiness, precipitation, low ceilings, poor visibility, and in the north, a sharp drop in temperature. Hurricanes or tropical storms can affect either coast of Mexico through November, and only rarely in December.

2. FLYING WEATHER. Normally good to excellent over most of Mexico. The only area of extensive cloudiness is the coast of the Gulf of Mexico. Skies are frequently clear to partly cloudy over the remainder of Mexico. The passage of a norther may temporarily hinder flying operations.

3. RECONNAISSANCE WEATHER. Usually good over all of Mexico except the east coast where extensive cloudiness makes conditions unfavorable most of the time.

4. TERMINAL WEATHER. Mexico City. Fair to good. Cloudiness is usually not a problem, but the visibility is frequently restricted by smoke and haze or morning fog. Ceiling/visibility less than 300 feet and/or 1 mile occurs 5-8 percent of the time during the early morning. Thunderstorms are uncommon except during October. Runway crosswinds exceed 15 knots 10-18 percent of the time during the midafternoon.

TERMINAL WEATHER. Tuxtla Gutierrez. Usually good. Cloudy conditions predominate during October and November, but ceilings are normally above 3500 feet and visibility is excellent. Skies clear rapidly after November. Ceiling/visibility less than 300/1 rarely occurs. Thunderstorms occur on about 5 days during October but become uncommon after that. Runway crosswinds greater than 15 knots during the afternoon can be a problem, occurring 20-35 percent of the time.

5. EXPOSURE WEATHER. Fair and dry in the central plateau. Morning temperatures are cool to cold and afternoon temperatures are mild. The southern coastal areas are warm to hot and humid. The west coast is partly cloudy and dry, but the east coast is cloudy with frequent rain.

<u>MEXICO CITY</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)					
Absolute Maximum	81	81	77	78	85
Mean Maximum	71	70	70	69	74
Mean Minimum	47	43	40	37	40
Absolute Minimum	32	27	27	27	24
MEAN PRECIPITATION (INCHES)	1.6	0.5	0.2	0.2	0.2
MEAN NUMBER OF DAYS					
Precipitation	10	5	2	2	3
Thunderstorms	4	2	*	1	1
<u>TUXTLA GUTIERREZ</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)					
Absolute Maximum	93	93	95	91	94
Mean Maximum	84	82	81	80	84
Mean Minimum	68	64	63	61	64
Absolute Minimum	53	54	49	49	52
MEAN PRECIPITATION (INCHES)	2.9	0.6	0.2	0.1	0.1
MEAN NUMBER OF DAYS					
Precipitation	9	1	1	*	*
Thunderstorms	5	1	*	1	0

* = less than 0.5 day

5. PARADROP WEATHER. Usually good, however conditions may be unfavorable 25-60 percent of the time during the afternoon due to winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Mexico City. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0609	0621	0638	0650	0643
Last Light	1836	1821	1824	1842	1859

(Prepared: 15 August 1979)

MARCH - MAY

1. GENERAL. In spring cloudiness decreases in northern Mexico as frontal passages become less frequent, but increases on the central plateau and the southern Pacific coast regions. Temperatures increase rapidly in the north. Throughout much of southern Mexico precipitation amounts remain fairly low during March and April, but increase rapidly in May. In northern Mexico precipitation amounts generally remain the same or decrease in comparison to the winter months. Mean cloudiness varies from 30-40 percent in northern Mexico and along the east coast. Morning low temperatures are in the 40's and 50's (F) in northern Mexico and on the central plateau, and in the 60's and 70's in southern Mexico including the coastal regions. Afternoon highs are in the 80's and 90's in northern Mexico, near 80F on the central plateau, and around 90F in southern Mexico. Rain falls on 1-3 days per month over much of Mexico except the east coast during March and April, but the frequency increases to 6-20 days in May. Northwestern Mexico and the northern Pacific coast continue to receive scanty rainfall through May. Thunderstorm frequency increases progressively throughout the season, principally on the central and southern parts of the plateau and on the west coast south of about 16N.

2. FLYING WEATHER. Generally good. The incidence of ceiling/visibility less than 5000 feet and/or 6 miles in central and southern Mexico increases from 10-30 percent in March to 40-60 percent in May. Ceiling/visibility less than 1500 feet/3 miles occurs 10-15 percent of the time in May. Conditions less than 500/1 are uncommon. The increasing frequency of thunderstorms over the central plateau and southern Mexico presents a hazard to aircraft operations.

3. RECONNAISSANCE WEATHER. Deteriorates in central and southern Mexico as the amount of cloud cover increases. Conditions are usually good in March, but deteriorate to poor by May. Reconnaissance weather remains good in northwestern Mexico.

4. TERMINAL WEATHER. Mexico City. Fair to good. Cloudiness increases so that by May there is a cloud ceiling around 3000 feet much of the time. Visibility is less than 3 miles due to haze and smoke as often as 10 percent of the time. Rainfall frequency increases from 3 to 12 days per month, and thunderstorm frequency increases from 2 to 7 days as the season progresses. Runway crosswinds exceed 15 knots 16-21 percent during the afternoon.

TERMINAL WEATHER. Tuxtla Gutierrez. Cloudiness, rainfall, and thunderstorm frequency increase progressively throughout the season. By May rain falls on 8 days per month, and thunderstorms on 9 days. Visibility is frequently reduced by smoke due to spring burning of fields. Runway crosswinds greater than 15 knots occur during the afternoon 13-32 percent of the time.

5. EXPOSURE WEATHER. In northern and central Mexico mornings are still chilly in March, but have become cool to mild by May. Afternoons are warm to hot. Afternoon showers over the plateau increase during May. The southern coastal areas are warm to hot and humid. Rain becomes frequent by May, especially on the southern Pacific coast.

<u>MEXICO CITY</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	89	92	93
Mean Maximum	79	81	80
Mean Minimum	44	47	50
Absolute Minimum	25	31	39
MEAN PRECIPITATION (INCHES)	0.5	0.7	1.9
MEAN NUMBER OF DAYS			
Precipitation	3	8	12
Thunderstorms	2	4	7
<u>TUXTLA GUTIERREZ</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	100	100	101
Mean Maximum	89	91	92
Mean Minimum	67	70	73
Absolute Minimum	52	58	58
MEAN PRECIPITATION (INCHES)	*	1.0	2.6
MEAN NUMBER OF DAYS			
Precipitation	*	1	8
Thunderstorms	1	3	9

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Usually good except that conditions during the late afternoon and early evening may be unfavorable 25-65 percent of the time due to winds in excess of 14 knots. During May, precipitation begins to interfere with operations in central and southern Mexico.

7. ASTRONOMICAL DATA. Mexico City. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0623	0557	0538
Last Light	1908	1916	1928

(Prepared: 15 August 1979)

JUNE - SEPTEMBER

1. GENERAL. Summer in much of Mexico is the season of maximum cloudiness and rainfall. Temperatures are warm to hot, extremely hot in the desert northwest. Mexico has three climatic areas: the east and the west coasts, including the mountain slopes that back the coasts, and the elevated interior plateau. Mean cloudiness in northwestern Mexico is 5-40 percent. The remainder of the country averages 30-80 percent cloudiness. Rainfall varies greatly across Mexico. Baja California and northwestern Mexico generally receive less than 0.5 inch per month. The southern coast of the Gulf of Mexico receives 10-20 inches per month. Much of Mexico is semiarid. Morning minimum temperatures vary from about 50F on the plateau to about 75F along the coastal areas of southern Mexico. Afternoon maximum temperatures are around 75F on the plateau and over 100F on the northwestern desert. Thunderstorms are frequent from Mexico City southward, averaging 7-16 per month. Most of northern Mexico averages less than 1-4 thunderstorms per month. Rain occurs on 15-25 days per month in the southern half of Mexico. Northern Mexico generally averages 1-10 days per month with rain, but some locations receive more frequent rain. Surface winds are easterly to southeasterly over most of Mexico, but they are northwesterly over Baja California and the northwestern desert. Both coasts are subject to the effects of tropical storms and hurricanes, with the greatest threat in September. Coastal areas on the Gulf of Tehuantepec are frequently subject to northerly gale winds.

2. FLYING WEATHER. Fair to good in southern Mexico and generally excellent in northern Mexico. The ceiling/visibility is less than 5000 feet and/or 6 miles as often as 60 percent of the time on the central plateau. Ceilings less than 1500 feet are infrequent on the plateau; but visibilities are often restricted by haze and smoke. Visibility in northern Mexico and on the coasts is usually good to excellent. Thunderstorms are frequent over the central plateau during the late afternoon. Thermal turbulence below 10,000 feet can be moderate to severe during the afternoon in the north.

3. RECONNAISSANCE WEATHER. Poor in southern and eastern Mexico due to heavy cloud cover, but good to excellent in northwestern Mexico. The mean number of days with cloud cover 2/8 or less and visibility 3 miles or more is 15-28 in the northwest and less than 5 elsewhere.

4. TERMINAL WEATHER. Mexico City. Fair to good. Conditions are usually cloudy with cloud ceilings around 3000 feet. Haze and smoke frequently restrict the visibility to 2-5 miles. Morning fog is common. Ceiling/visibility less than 300/1 is infrequent in June through September, but occurs more than 1 percent of the time during the afternoon in September. Thunderstorms occur on 8-12 days per month, usually during the late afternoon. Hail occurs infrequently. Rain is light but frequent, occurring on 10-24 days per month. Late afternoon and early evening crosswinds greater than 15 knots occur 5-20 percent of the time.

TERMINAL WEATHER. Tuxtla Gutierrez. Good. Skies are predominantly overcast with ceilings 4000-5000 feet. Visibility is good. Ceiling/visibility less than 300/1 is rare. Thunderstorms occur 7-11 days per month and rain falls on 15-18 days. Afternoon crosswinds greater than 15 knots occur 3-15 percent of the time. Morning fog is common, but it does not significantly restrict the visibility.

5. EXPOSURE WEATHER. Extremely hot and dry in the northwestern desert. The central plateau has cool nights and warm days with frequent light afternoon rain showers or thunderstorms. The entire east coast and the southern part of the west coast are hot, humid, and cloudy with fairly heavy rainfall.

<u>MEXICO CITY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)				
Absolute Maximum	89	82	83	82
Mean Maximum	76	74	74	73
Mean Minimum	52	50	50	51
Absolute Minimum	40	44	43	38
MEAN PRECIPITATION (INCHES)	3.9	4.1	4.6	3.9
MEAN NUMBER OF DAYS				
Precipitation	18	24	24	22
Thunderstorms	8	12	10	8
<u>TUXTLA GUTIERREZ</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)				
Absolute Maximum	100	93	94	94
Mean Maximum	87	86	87	86
Mean Minimum	71	70	70	70
Absolute Minimum	63	63	63	64
MEAN PRECIPITATION (INCHES)	8.9	6.0	6.2	6.4
MEAN NUMBER OF DAYS				
Precipitation	18	15	15	18
Thunderstorms	12	14	16	11

6. PARADROP WEATHER. Generally good, however, conditions on the central plateau are unfavorable 40-60 percent of the time during the late afternoon and early evening due to rain and winds in excess of 13 knots. Elsewhere, conditions are usually favorable at least 65 percent of the time.

7. ASTRONOMICAL DATA. Mexico City. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0533	0542	0554	0602
Last Light	1940	1942	1927	1901

SITUATION CLIMATIC BRIEF

NICARAGUA

JANUARY - APRIL

1. GENERAL. This season is dry with most of the country experiencing hot days, cooler nights, and partly cloudy skies with a marked decline in rainfall. The exception is the Caribbean coast where the weather is characterized by persistent cloudiness and rain throughout the year. Temperatures range from the mid 60's to mid 70's (F) at night to the low 90's by afternoon. Mean sky cover averages 40-50 percent inland and along the Pacific coast regions, but increases to 70 percent along the Caribbean coast. Monthly rainfall varies from less than 0.5 inch to 2 inches in the dry parts of the country to a maximum of up to 10 inches along the Caribbean coast where rain can occur on as many as 23 days out of the month. Visibilities are generally good with visibility less than 2.5 miles occurring approximately 1-3 days per month. Visibility is restricted by haze/smoke near industrial centers. Wind speeds average 10-12 knots. Gusty surface winds generally occur up to 6 days per month.

2. FLYING WEATHER. Fair to good. At Bluefields on the Caribbean coast the percentage frequency of ceiling/visibility less than 5000 feet and/or 6 miles is 1-3 percent and less than 1500 feet/3 miles, less than 1 percent. At Managua the percentage frequency of ceiling/visibility less than 5000/6 is 10-15 percent and less than 2000/2.5, approximately 1 percent. During the dry season aircraft icing can be encountered in the clouds near the mountains or in conjunction with a cold frontal passage. Low-level clear-air turbulence occasionally occurs on hot sunny days.

3. RECONNAISSANCE WEATHER. Poor along the Caribbean coast due to frequent rainfall and heavy cloudiness, but improves inland and along the Pacific coast. At Managua, sky cover 2/8 or less and visibility 2.5 miles or greater exists up to 16 days per month. On the Caribbean coast favorable reconnaissance weather decreases to 1-7 days a month with highest frequency of good weather in the afternoon hours.

4. TERMINAL WEATHER. Las Mercedes, Nicaragua. Warm and cloudy with gusty surface winds and little precipitation. Skies are clear 10-15 percent of the time. Visibility is restricted by haze and/or smoke 45-50 percent of the time. The visibility rarely goes below 6 miles. Rain is expected only 1-2 days per month. Gusty surface winds generally exist 5-10 percent of the time; gale force winds, less than 1 percent. Ceiling/visibility conditions less than 300/1 are rare.

TERMINAL WEATHER. Bluefields, Nicaragua. Cloudy and rainy. Skies are rarely clear, partly cloudy to cloudy 85-90 percent, and overcast 10-15 percent of the time. Rain occurs on 11-22 days per month. Mean precipitation ranges from 10.5 inches in January decreasing to 2.9 inches in April. Gusty surface winds are expected 2-5 percent of the time. Gale force winds are rare. Visibility is restricted by haze/smoke 25-30 percent of the time, but rarely goes below 6 miles. Early morning fog occasionally forms, but dissipates rapidly after sunrise.

5. EXPOSURE WEATHER. Hot days and cooler nights are the rule. Dry conditions prevail except along the Caribbean coast. The mean relative humidity ranges from 80 percent in the morning to 60 percent in the afternoon. These high humidities coupled with temperatures in the mid 80's are debilitating to active personnel who are not acclimated to the tropics.

<u>MANAGUA</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)				
Absolute Maximum	92	93	94	98
Mean Maximum	88	89	91	94
Mean Minimum	69	70	72	73
Absolute Minimum	62	63	67	68
MEAN PRECIPITATION (INCHES)	*	*	*	*
MEAN NUMBER OF DAYS				
Precipitation	2	2	1	2
Thunderstorms	0	0	0	0
<u>BLUEFIELDS</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
TEMPERATURE (F)				
Absolute Maximum	90	90	91	93
Mean Maximum	85	85	87	88
Mean Minimum	69	69	71	72
Absolute Minimum	60	61	62	62
MEAN PRECIPITATION (INCHES)	10.5	5.1	3.2	2.9
MEAN NUMBER OF DAYS				
Precipitation	22	15	12	11
Thunderstorms	0	0	0	0

* = less than 0.05 inch

6. PARADROP WEATHER. Fair to good. The percentage frequency of occurrence of favorable conditions is 50-80 percent at Bluefields and 65-95 percent at Managua. The major limiting weather factors are rain, cloudiness, and gusty surface winds.

7. ASTRONOMICAL DATA. Managua, Nicaragua. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
First Light	0547	0545	0531	0511
Last Light	1802	1813	1817	1818

(Prepared: 5 February 1979)

MAY

1. GENERAL. May is the transition month between the dry and wet seasons. Rainfall and cloudiness increase substantially in all parts of Nicaragua. Skies are clear 1-5 percent, partly cloudy 20-25 percent, cloudy 40-60 percent, and overcast 15-35 percent of the time. Rain occurs on 10-17 days and thunderstorms on 2-4 days depending on location. Skies are the cloudiest and rainfall the heaviest on the Caribbean side of the mountains. Gusty winds in excess of 16 knots are expected approximately 5 percent of the time. Gale force winds are rare. The monthly probability of a tropical storm and/or hurricane affecting Nicaragua is 5 percent.

2. FLYING WEATHER. Fair to good. At Managua the percentage frequency that the ceiling/visibility is less than 5000 feet and/or 6 miles is 30 percent; less than 1500 feet/3 miles, approximately 1 percent; and less than 500/1, near zero. Flying activities may be restricted due to heavy rainfall and cloudiness, particularly on the eastern side of the mountains. Mountain-wave turbulence can be expected over and near the mountains, but its frequency of occurrence is unknown.

3. RECONNAISSANCE WEATHER. Generally poor. The percentage frequency that the sky cover is 2/8 or less ranges from approximately 5 percent east of the mountains to 10 percent west of the mountains. Visibility is generally good except when obstructed by heavy rain showers. In the Managua area, visibility may be restricted by haze and/or smoke. The visibility is less than 3 miles approximately 1 percent of the time at most locations.

4. TERMINAL WEATHER. Generally good. The ceiling/visibility is less than 300/1 approximately 1-2 percent of the time at most locations. Rain is frequent and heavy at times. Fog is expected 1 percent of the time primarily during the early morning hours. At Managua, the visibility is restricted by haze and/or smoke 60 percent of the time. Gusty winds greater than 16 knots are expected 5 percent, and gale force winds are rare.

5. EXPOSURE WEATHER. Hot, humid, and cloudy with frequent rain showers. Rain is more frequent and heavier on the eastern side of the mountains. Tropical storms and/or hurricanes may bring torrential rain and high winds to most of Nicaragua.

MANAGUA (LAS MERCEDES), NICARAGUA MAY

TEMPERATURE (F)	
Absolute Maximum	98
Mean Maximum	93
Mean Minimum	74
Absolute Minimum	65

MEAN PRECIPITATION (INCHES)	3.1
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MEAN NUMBER OF DAYS	
Precipitation	10
Thunderstorms	2

BLUEFIELDS, NICARAGUA MAY

TEMPERATURE (F)	
Absolute Maximum	94
Mean Maximum	87
Mean Minimum	74
Absolute Minimum	67

MEAN PRECIPITATION (INCHES)	13.6
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MEAN NUMBER OF DAYS	
Precipitation	17
Thunderstorms	1

6. PARADROP WEATHER. Fair to good. The weather is favorable 60-85 percent of the time. The weather is unfavorable primarily due to heavy rainfall and winds greater than 13 knots.

7. ASTRONOMICAL DATA. Managua (Las Mercedes), Nicaragua. (Date as of the 15th/ local standard time)

CIVIL TWILIGHT MAY

First Light	0458
Last Light	1824

(Prepared: 5 February 1979)

JUNE - OCTOBER

1. GENERAL. This is the wet season characterized by frequent precipitation and heavy cloudiness. Temperatures range from the low to mid 70's (F) in the morning

to the mid 80's to low 90's in the afternoon. Mean sky cover ranges from 70 to 80 percent, primarily in the form of low clouds. Precipitation is the most frequent along the Caribbean lowlands with a monthly average of 10-26 inches. It is slightly drier in the interior strip. Precipitation can be expected on 17-30 days per month. Thunderstorms occur on 1-14 days and are frequently accompanied by strong, gusty winds, and violent lightning. Visibilities are generally good in the interior, but worsen along the coast. In the coastal region visibilities less than 6 miles generally occur 10-20 days per month. The primary restrictions to visibility are fog, heavy rain showers, haze, and/or smoke. Winds are usually calm during the night and increase during the day. Wind speeds generally average less than 15 knots, but winds up to 55 knots may occur during severe thunderstorms. The average monthly probability of a tropical storm and/or hurricane affecting the local weather ranges from 15 to 25 percent.

2. FLYING WEATHER. Fair to good. At Bluefields the percentage frequency of ceiling/visibility less than 5000 feet and/or 6 miles is 5-15 percent and less than 1500 feet/3 miles, 1-3 percent. Heavy rain showers and thunderstorms are frequent throughout the country, but especially along the coast. Maximum tops occasionally reach 60,000 feet and have been reported as high as 80,000 feet. Severe turbulence is associated with these storms. Mountain-wave turbulence west of the ridges presents a hazard to flying activities.

3. RECONNAISSANCE WEATHER. Poor. The mean number of days with sky cover 2/8 or less and visibility 2.5 miles or greater ranges from 1 to 5 days per month during the wet season.

4. TERMINAL WEATHER. Good. The percentage frequency of ceiling/visibility less than 300/1 at Managua is 0-1 percent; at Bluefields, 1-2 percent. Mean winds are less than 10 knots during the evening and increase to 15 knots during the afternoon. Stronger winds are associated with thunderstorms, tropical storms, and/or hurricanes. The primary restrictions to visibility are heavy rain showers, fog, smoke, and/or haze.

5. EXPOSURE WEATHER. Hot and very humid with frequent rain showers. High humidities may make temperatures oppressive.

<u>MANAGUA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)					
Absolute Maximum	95	92	93	94	94
Mean Maximum	88	88	89	89	88
Mean Minimum	73	73	73	73	72
Absolute Minimum	69	70	70	69	66
MEAN PRECIPITATION (INCHES)	8.2	3.6	5.1	6.8	6.3
MEAN NUMBER OF DAYS					
Precipitation	13	11	10	11	10
Thunderstorms	13	13	10	14	7
<u>BLUEFIELDS</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
TEMPERATURE (F)					
Absolute Maximum	94	93	92	94	94
Mean Maximum	87	85	87	89	88
Mean Minimum	73	73	73	72	71
Absolute Minimum	66	67	62	66	64
MEAN PRECIPITATION (INCHES)	19.8	26.2	21.5	12.3	13.6
MEAN NUMBER OF DAYS					
Precipitation	N/A	N/A	N/A	19	20
Thunderstorms	*	*	*	*	*

* = less than 0.5 day
N/A = data not available

6. PARADROP WEATHER. Fair to good. During the earlier months of the wet season, the conditions are favorable 25-50 percent of the time. They are favorable 60-90 percent during September and October. The primary weather factors leading to unfavorable conditions are high winds and frequent precipitation.

7. ASTRONOMICAL DATA. Managua, Nicaragua. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>
First Light	0457	0504	0511	0513	0513
Last Light	1833	1837	1327	1807	1748

(Prepared: 5 February 1979)

NOVEMBER - DECEMBER

1. GENERAL. November and December are the transitional months between the wet and dry seasons. The weather is characterized by hot temperatures, cloudy skies, and a general decline in precipitation. Morning lows range from the high 60's to mid 70's (F) and warm to the low 90's by afternoon. Mean sky cover ranges from 20-40 percent in the inland portion of Nicaragua to as high as 70 percent along the coast. Likewise, the mean precipitation increases from inland to the coast. Mean monthly amounts range from 2-20 inches with a pronounced maximum in the coastal regions. Thunderstorms can be expected on 4-6 days per month. Visibilities less than 2.5 miles can be expected approximately 1 day per month. The primary restrictions to visibility are fog and smoke and/or haze. Winds greater than 16 knots occur 1-2 days per month, and usually occur in the afternoon. The probability of having at least one tropical storm and/or hurricane affect Nicaragua is 10 percent in November. Tropical storms are rare in December.

2. FLYING WEATHER. Fair to good. At Bluefields, the percentage frequency that ceiling/visibility is less than 5000 feet and/or 6 miles is approximately 5 percent, and less than 1500 feet/3 miles is approximately 1 percent. For Las Mercedes (Managua), the percentage frequency that the ceiling/visibility is less than 5000/6 is approximately 15 percent and for less than 1500/3 is 1 percent. Turbulence can be expected in association with thunderstorms. Low-level clear-air turbulence sometimes is present on hot, sunny days.

3. RECONNAISSANCE WEATHER. Poor except at Managua. The rest of the country averages 1-2 days per month with total sky cover 2/8 or less and visibility 2.5 miles or better. However, at Managua, this figure increases to 10-13 days.

4. TERMINAL WEATHER. Las Mercedes, Nicaragua. Warm and cloudy with light rain storms and occasional gusty surface winds. Skies are clear 5 percent, partly cloudy to cloudy 70-80 percent, and overcast 10-25 percent of the time. Visibility is generally good with early morning fog occurring less than 1 day a month. Rain is expected on 7 days in November and on 2 days in December. Gusty winds are expected 2-5 percent of the time; gale force winds are rare. There is no occurrence of ceiling/visibility less than 300/1.

TERMINAL WEATHER. Bluefields, Nicaragua. Cloudy and rainy. Clear skies are rare. Skies are partly cloudy to cloudy 75-80 percent of the time and overcast, 20-25 percent. Rainfall is expected on 22 days per month. The ceiling/visibility rarely goes below 300/1. Gusty surface winds are expected 2-5 percent of the time; gale force winds are rare.

5. EXPOSURE WEATHER. Hot and partly cloudy with occasional rain. Very little rain can be expected in the interior of Nicaragua. On the coast 10 inches of rain a month is not rare. The relative humidity is not as oppressive as in the wet season.

<u>MANAGUA</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)		
Absolute Maximum	92	91
Mean Maximum	88	87
Mean Minimum	71	70
Absolute Minimum	64	59

MEAN PRECIPITATION (INCHES)	1.2	0.3
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MEAN NUMBER OF DAYS		
Precipitation	7	2
Thunderstorms	1	*

<u>BLUEFIELDS</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)		
Absolute Maximum	93	93
Mean Maximum	86	85
Mean Minimum	70	69
Absolute Minimum	62	62

MEAN PRECIPITATION (INCHES)	15.3	15.7
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MEAN NUMBER OF DAYS		
Precipitation	22	22
Thunderstorms	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Generally good. Excellent at Managua. Bluefields weather conditions are favorable 50-70 percent of the time, but frequent precipitation reduces the probability of success. At Managua where it is much drier during this season, the percentage frequency of favorable weather conditions increase to 80-95 percent.

7. ASTRONOMICAL DATA. Las Mercedes, Nicaragua. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0520	0534
Last Light	1739	1745

(Prepared: 21 December 1979)

SITUATION CLIMATIC BRIEF

PARAGUAY

OCTOBER - MARCH

1. GENERAL. The rainy season in Paraguay is hot and humid. Skies are partly cloudy to cloudy and rain is frequent. Maximum cloudiness and rainfall occur during the afternoon. Mean cloudiness at night is 30-50 percent, during the day, 50-80 percent. Daily minimum temperatures average 60-75F; maximum temperatures average 80-95F. Rain falls on 5-13 days per month, usually as afternoon convective showers. Thunderstorms occur on 1-8 days per month. Surface winds are northerly or variable and speeds are generally light.

2. FLYING WEATHER. Generally good. Afternoon thunderstorms are the chief hazard to flying, but these can usually be circumnavigated. The ceiling/visibility is less than 5000 feet and/or 6 miles 10-40 percent of the time. Conditions less than 1500 feet/3 miles and 500/1 are infrequent except briefly in heavy showers.

3. RECONNAISSANCE WEATHER. Fair to good except during the afternoon when it becomes poor due to increased convective cloud cover. The cloud cover is 2/8 or less and the visibility is 3 miles or greater on 1-8 days per month during the afternoon, and on 8-18 days per month at other times.

4. TERMINAL WEATHER. Asuncion/Pres. Stroessner Airport, Paraguay. Good. There is occasional morning fog, but ceiling/visibility conditions less than 300/1 occur less than 3 percent of the time. Thunderstorms occur on 1-3 days per month. Runway crosswinds greater than 15 knots are rare.

5. EXPOSURE WEATHER. Hot and humid with frequent afternoon rain showers.

ASUNCION/PRES. STROESSNER AIRPORT, PARAGUAY

	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
TEMPERATURE (F)						
Absolute Maximum	102	103	106	107	105	104
Mean Maximum	84	87	91	93	92	89
Mean Minimum	65	69	73	74	74	71
Absolute Minimum	48	54	56	59	57	53
MEAN PRECIPITATION (INCHES)	5.7	5.1	4.8	6.6	5.6	6.3
MEAN NUMBER OF DAYS						
Precipitation	8	7	6	8	7	7
Thunderstorms	3	2	3	2	2	1

6. PARADROP WEATHER. Good. Afternoon rain showers may interfere with paratroops, but conditions at Asuncion are favorable at least 70 percent of the time.

7. ASTRONOMICAL DATA. Asuncion/Pres. Stroessner Airport, Paraguay. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>
First Light	0453	0430	0428	0448	0512	0528
Last Light	1819	1840	1902	1911	1856	1829

(Prepared: 21 December 1979)

APRIL - SEPTEMBER

1. GENERAL. The dry season in Paraguay is characterized by partly cloudy skies and reduced rainfall, although there are brief periods of cloudy and rainy weather caused by the intrusion of migratory polar air masses. Mean cloudiness is 30-70 percent, with minimum cloud amounts occurring in the evening and nighttime hours. Daily minimum temperatures during the cooler months average 50-60F; maximums average 70-80F. Rain falls on about 2-7 days per month, usually in association with migratory pressure systems, but occasionally as convective showers. Thunderstorms occur on fewer than 1-4 days per month. The northern part of Paraguay usually has less cloudiness and rain than the southern part. Surface winds are generally northeasterly at 5-10 knots.

2. FLYING WEATHER. Generally good. Some locations have a high frequency of morning fog, notably along the southeastern border near Brazil. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-50 percent of the time; less than 1500 feet/3 miles up to 40 percent and 500/1 up to 30 percent of the time, mainly during periods of fog along the larger rivers. Thunderstorms along cold fronts cause the greatest hazard to flying. These are frequently not visible because they are embedded in extensively layered clouds.

3. RECONNAISSANCE WEATHER. Fair to poor, but improves during the evening hours. The cloud cover is 2/8 or less and the visibility is 3 miles or greater on 2-15 days per month during the morning and afternoon, and 10-20 days per month at night.

4. TERMINAL WEATHER. Asuncion/Pres. Stroessner Airport, Paraguay. Fair to good. Morning fog occasionally restricts flying operations. Ceiling/visibility conditions less than 300/1 occur 2-3 percent of the time. Thunderstorms occur on about 1 day per month. Runway crosswinds greater than 15 knots are rare.

5. EXPOSURE WEATHER. Usually mild to warm with occasional rain. Freezing temperatures have been known to occur, but are infrequent.

ASUNCION/PRES. STROESSNER AIRPORT, PARAGUAY

	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
TEMPERATURE (F)						
Absolute Maximum	96	91	90	91	100	102
Mean Maximum	82	77	73	73	78	79
Mean Minimum	66	62	59	57	59	62
Absolute Minimum	44	39	37	37	36	39
MEAN PRECIPITATION (INCHES)	5.4	5.2	3.4	2.1	1.2	3.4
MEAN NUMBER OF DAYS						
Precipitation	6	6	6	6	4	6
Thunderstorms	1	1	1	1	1	2

6. PARADROP WEATHER. Generally good, but paradrops may be hampered during the morning by fog. Conditions are favorable 50-90 percent of the time.

7. ASTRONOMICAL DATA. Asuncion/Pres. Stroessner Airport, Paraguay. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>
First Light	0542	0555	0608	0610	0554	0525
Last Light	1758	1737	1733	1742	1755	1806

(Prepared: 18 August 1980)

SITUATION CLIMATIC BRIEF

PERU

ANNUAL

1. GENERAL. The Andes Mountains cause a distinct contrast in climate, i.e., cloudy and very dry to the west, and hot, humid, and wet to the east. Mountainous areas are generally cloudy with moderate rainfall and temperatures governed by elevation. A coastal desert exists west of the Andes with mean cloudiness ranging from 30-100 percent and little or no rain. Average maximum temperatures vary between 75F to 95F along the northern coastal section and 65F to 80F in the south. Mean daily minimums in these regions range from 45F to 60F. A jungle climate prevails east of the Andes with mean cloud cover of 50-100 percent and torrential rain. Low temperatures average in the upper 60's. Highs are in the upper 80's. Temperatures vary widely in the mountains and can approach -10F at higher elevations. Thunderstorms are uncommon in Peru; however, they are locally numerous at a few mountain locations.

2. FLYING WEATHER. Fair to good. Poor on the eastern slopes of the Andes due to dense clouds and heavy rain. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 70-100 percent of the time along the coast during the winter (June-September) and 50-85 percent of the time elsewhere; less than 1500/3 and 500/1 are common along the coast and occur as often as 50 percent of the time during the early morning in the eastern jungles.

3. RECONNAISSANCE WEATHER. Poor to fair. Fair to good in the southern mountains. Sky cover of 2/8 or less and visibility of 3 miles or greater occur up to 25 days per month in the southern mountains, but 15 days or less elsewhere. Less than five favorable reconnaissance days per month occur in the eastern jungles.

4. TERMINAL WEATHER. Lima/Jorge Chavez, Peru. Fair. Low clouds are the rule. Ceilings less than 1500 feet occur up to 75 percent of the time; less than 300/1 is rare. Very light drizzle occurs frequently, but accumulations are insignificant. Thunderstorms almost never occur.

5. EXPOSURE WEATHER. Cloudy, warm, and humid along the coast where rain is almost nonexistent. The mountains are partly to mostly cloudy with temperatures at night falling below freezing during all months. The slopes and lowlands east of the mountains are hot and humid with frequent heavy rain.

<u>LIMA, PERU</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
TEMPERATURE (F)						
Absolute Maximum	84	86	84	84	81	77
Mean Maximum	78	79	79	76	72	68
Mean Minimum	65	66	66	63	60	59
Absolute Minimum	59	59	61	52	50	48
MEAN PRECIPITATION (INCHES)	*	*	*	*	0.1	0.2
MEAN NUMBER OF DAYS						
Precipitation	2	1	1	1	7	16
Thunderstorms	*	*	0	0	0	0

	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
TEMPERATURE (F)						
Absolute Maximum	82	73	75	72	79	84
Mean Maximum	65	66	65	68	71	76
Mean Minimum	58	58	58	59	61	63
Absolute Minimum	48	52	54	55	50	57
MEAN PRECIPITATION (INCHES)	0.2	0.2	0.2	0.1	*	*
MEAN NUMBER OF DAYS						
Precipitation	16	17	16	9	5	3
Thunderstorms	0	0	0	0	0	0

* = less than 0.5 day or 0.05 inch

6. PARADROP WEATHER. Fair to poor at Lima due to low cloud cover. Conditions are at their worst during the morning and during the winter (June-September). Conditions are favorable for paradrops only 20-25 percent of the time during the winter.

7. ASTRONOMICAL DATA. Lima/Jorge Chavez, Peru. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
First Light	0532	0546	0551	0552	0555	0603
Last Light	1903	1859	1844	1825	1814	1814
	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
First Light	0607	0600	0542	0522	0511	0515
Last Light	1821	1826	1826	1827	1836	1852

(Prepared: 24 March 1981)

SITUATION CLIMATIC BRIEF

PUERTO RICO*

MARCH - MAY

1. GENERAL. Spring is characterized by increasing cloudiness and precipitation with warm temperatures. Mean cloud cover ranges from 30 to 70 percent. May is the cloudiest month. Precipitation occurs as rain showers on 9-19 days per month. Thunderstorms are infrequent. Mean daily minimum temperatures are in the 60's (F) and 70's, and maximums are in the 80's. Mean relative humidities range from 60 percent to 85 percent.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, infrequently.

3. RECONNAISSANCE WEATHER. Fair to good in March. Poor to fair in April and May. Sky cover of 2/8 or less and visibilities of 3 miles or greater occur 5-15 days per month.

4. TERMINAL WEATHER. San Juan, Puerto Rico. Good. Conditions are partly cloudy to cloudy with frequent rain showers. Ceiling/visibility less than 300/1 is rare.

5. EXPOSURE WEATHER. Warm with frequent, brief rain showers. Humidities are high, but constant easterly breezes help keep conditions comfortable.

<u>SAN JUAN, PUERTO RICO</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	91	93	94
Mean Maximum	81	82	84
Mean Minimum	70	72	74
Absolute Minimum	63	65	66
MEAN PRECIPITATION (INCHES)	2.7	4.0	6.1
MEAN NUMBER OF DAYS			
Precipitation	15	14	16
Thunderstorms	*	1	2

* = less than 0.5 day

6. PARADROP WEATHER. Good, except locally poor during the afternoon due to gusty winds. Conditions are favorable for paratroops 18-36 percent of the time at San Juan during the afternoon, and 45-90 percent of the time at other hours.

7. ASTRONOMICAL DATA. San Juan, Puerto Rico. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0611	0545	0527
Last Light	1856	1903	1914

* Only seasons available.

(Prepared: 24 March 1981)

JUNE - AUGUST

1. GENERAL. Summer is partly cloudy to cloudy and warm with frequent rain showers. Mean cloudiness ranges from 30-85 percent. Early morning is the least cloudy time of day. Mean daily minimum temperatures are in the upper 60's (F) to mid 70's. Maximums are in the upper 80's to lower 90's. Rain showers occur 9-22 days per month, with thunderstorms on 2-3 days per month. Hurricanes have threatened the island during August, but are rare.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-25 percent of the time; less than 1500/3, infrequently.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur less than 10 days per month.

4. TERMINAL WEATHER. San Juan, Puerto Rico. Conditions are partly cloudy to cloudy with frequent rain showers and an occasional thunderstorm. Afternoons are windy. Ceiling/visibility less than 300/1 is rare.

5. EXPOSURE WEATHER. Warm and humid with frequent rain showers, but conditions are usually kept comfortable by the constant easterly breezes.

<u>SAN JUAN, PUERTO RICO</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	93	92	93
Mean Maximum	84	85	85
Mean Minimum	75	75	76
Absolute Minimum	66	70	68
MEAN PRECIPITATION (INCHES)	5.4	5.8	6.1
MEAN NUMBER OF DAYS			
Precipitation	16	19	20
Thunderstorms	3	3	3

6. PARADROP WEATHER. Poor during the afternoon at San Juan due to gusty winds. Fair to good at other hours. Conditions are favorable for paradrops 9-36 percent of the time during the afternoon, and 40-95 percent of the time at other hours.

7. ASTRONOMICAL DATA. San Juan, Puerto Rico. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0523	0532	0543
Last Light	1926	1928	1914

(Prepared: 6 December 1979)

SITUATION CLIMATIC BRIEF

URUGUAY

DECEMBER - MAY

1. **GENERAL.** Summer and autumn weather in Uruguay is characterized by partly cloudy skies, warm to hot temperatures, and afternoon rain showers and thunderstorms. Episodes of cloudy weather with continuous, light precipitation increase in frequency during autumn. Mean cloudiness ranges from 30 to 60 percent. Maximum cloudiness usually occurs in the afternoon due to convective activity. There is an increase of low-level clouds in the morning during May, especially along the south and southwest coast. Daily minimum temperatures during January, the warmest month, are 60-65°F. Daily maximum temperatures are in the high 80's and low 90's (°F) except along the coast where they are about 10 degrees cooler. Rain falls on an average of 4-10 days per month, normally as showers. Monthly amounts range from 1-6 inches. Thunderstorms occur on 1-9 days per month. Gale force winds occur 1-4 days per month along the coast, but are infrequent elsewhere.

2. **FLYING WEATHER.** Generally good. Low clouds during the morning may temporarily hinder flying operations along the coast. Thunderstorms present the only significant hazard during the afternoon. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time along the coast, and somewhat less frequently inland. Ceiling/visibility less than 1500 feet/3 miles occurs 5-15 percent of the time; and less than 500/1, up to 5 percent. May is the cloudiest month.

3. **RECONNAISSANCE WEATHER.** Fair to poor over coastal areas, and fair to good inland. The cloud cover is 2/8 or less and the visibility 3 miles or greater on an average of 5-20 days per month. Reconnaissance weather generally deteriorates through the autumn season.

4. **TERMINAL WEATHER.** Montevideo/Carrasco, Uruguay. Generally good at Carrasco Airport. Ceiling/visibility less than 300/1 is infrequent during midsummer, but occurs up to 5 percent of the time in May, due primarily to morning low cloudiness. Thunderstorms occur about 3 days per month. Runway crosswinds greater than 15 knots (runway 06-24) can be a problem, occurring often as 45 percent of the time.

5. **EXPOSURE WEATHER.** Afternoon temperatures from December-February are uncomfortably hot at inland locations, but are generally moderate along the coast. Afternoon rain showers or thundershowers occur frequently. Temperatures are mild to warm from March-May.

MONTEVIDEO/CARRASCO, URUGUAY

	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (°F)						
Absolute Maximum	104	104	100	99	91	90
Mean Maximum	80	85	82	78	71	67
Mean Minimum	60	63	62	60	54	50
Absolute Minimum	43	46	43	43	36	30
MEAN PRECIPITATION (INCHES)	3.5	2.5	3.6	3.3	2.6	2.4
MEAN NUMBER OF DAYS						
Precipitation	7	6	8	8	6	7
Thunderstorms	3	3	3	3	2	1

6. **PARADROP WEATHER.** Fair to poor at Montevideo due primarily to winds in excess of 13 knots. The weather is favorable about 25-65 percent of the time.

7. ASTRONOMICAL DATA. Montevideo/Carrasco, Uruguay. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0455	0518	0551	0618	0642	0704
Last Light	2023	2029	2005	1928	1846	1817

(Prepared: 12 December 1979)

JUNE - NOVEMBER

1. GENERAL. The weather in Uruguay during Southern Hemisphere winter and spring is partly cloudy to cloudy with frequent light precipitation and mild temperatures. Most precipitation is the result of migratory winter storms. Mean cloudiness is 35-75 percent. Mean daily minimum temperatures during July, the coolest month, are in the mid 40's (F), increasing to the mid to upper 50's by November. Daily maximum temperatures are 60-65F in July and 75-85F in November. Rain falls on 4-10 days per month, and amounts range from 1-6 inches. Thunderstorms occur on 1-6 days per month, usually in association with the passage of cold fronts. Gale force winds can be expected along the southern coast on 1-4 days per month.

2. FLYING WEATHER. Fair to poor. Morning fog and low clouds frequently restrict flying operations, especially in the south and southwest parts of the country. The ceiling/visibility is less than 5000 feet and/or 6 miles 15-60 percent of the time. July is the poorest month, November the best. Conditions less than 1500 feet/3 miles occur 5-25 percent of the time; and less than 500/1, 1-15 percent. Thunderstorms are especially hazardous at this time of year because they are frequently embedded in extensively layered clouds, and thus are not readily visible. Turbulence is often encountered near cold fronts and the jet stream. Flying conditions improve in the spring.

3. RECONNAISSANCE WEATHER. Frequently poor in the morning and early afternoon due to extensive fog and low clouds, but improves during the evening. Regionally, the southern and southwestern parts of the country have the poorest reconnaissance weather, and the northwestern parts the best. Cloud cover 2/8 or less and visibility 3 miles or greater occurs on 3-18 days per month during the morning and afternoon, and 6-20 days per month during the evening. Reconnaissance weather becomes fair to good by November.

4. TERMINAL WEATHER. Montevideo/Carrasco, Uruguay. Frequently poor at Carrasco airport during the morning and early afternoon due to fog and low clouds, but is generally fair at other times. Conditions less than 300/1 occur as often as 15 percent of the time during July, the poorest month. Runway crosswinds greater than 15 knots (runway 06-24) occur 10-35 percent of the time. Gale force winds occur 1-3 days per month.

5. EXPOSURE WEATHER. Cool to mild and generally cloudy with frequent light rain and an occasional thunderstorm. Temperatures become warm by November.

MONTEVIDEO/CARRASCO, URUGUAY

	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)						
Absolute Maximum	82	84	86	90	90	93
Mean Maximum	61	60	62	61	68	74
Mean Minimum	45	45	44	48	51	56
Absolute Minimum	19	25	28	30	34	37
MEAN PRECIPITATION (INCHES)	3.5	3.1	3.5	2.6	4.1	3.6
MEAN NUMBER OF DAYS						
Precipitation	8	9	7	7	8	8
Thunderstorms	1	2	1	2	2	2

6. PARADROP WEATHER. Generally poor at Montevideo due to low ceilings, frequent precipitation, and gusty winds. Conditions are favorable only 20-60 percent of the time.

7. ASTRONOMICAL DATA. Montevideo/Carrasco, Uruguay. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0721	0722	0659	0619	0537	0503
Last Light	1807	1818	1839	1900	1924	1955

(Prepared: 15 June 1981)

SITUATION CLIMATIC BRIEF

VENEZUELA

DECEMBER - APRIL

1. GENERAL. This is the dry season for most of Venezuela. The weather is frequently cloudy, hot, and humid. Mean cloud cover varies from 30 percent over the northern lowlands to 85 percent in northwestern Venezuela near Lake Maracaibo. Mean daily minimum temperatures range from 56F to 77F. Maximums range from 72F to 97F. Precipitation, usually rain showers, is frequent over the eastern and southeastern regions even during this relative dry season. Thunderstorms are rare, but still occur 5 days a month in extreme southeastern Venezuela. Gale force winds (28 knots or greater) occur in association with thunderstorms.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-35 percent of the time; less than 1500/3, 2-10 percent; and less than 500/1, less than 5 percent. The burning of the dry grasslands in March and April can restrict visibility with smoke both at the surface and aloft.

3. RECONNAISSANCE WEATHER. Poor. There are very few cloud-free days anywhere in Venezuela. Northernmost sections tend to have the least cloudiness and the Andes and eastern mountain slopes the greatest. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 2-8 days per month.

4. TERMINAL WEATHER. Caracas, Venezuela. Good. Occasionally, poor in the afternoon hours due to rain showers and extensive cloudiness. Ceiling/visibility less than 300/1 occurs 2-5 percent of the time mainly in association with rain showers.

5. EXPOSURE WEATHER. Often uncomfortable due to hot days, warm nights, and high humidity. Afternoon rain showers serve to aggravate these conditions in the eastern and southeastern regions. Equipment and clothing exposed to these conditions for long periods may be adversely affected.

CARACAS, VENEZUELA	DEC	JAN	FEB	MAR	APR
TEMPERATURE (F)					
Absolute Maximum	85	87	89	91	92
Mean Maximum	75	75	77	78	80
Mean Minimum	58	56	56	57	60
Absolute Minimum	47	47	46	45	51
MEAN PRECIPITATION (INCHES)	1.8	0.9	0.4	0.5	1.3
MEAN NUMBER OF DAYS					
Precipitation	10	6	3	3	5
Thunderstorms	1	*	0	0	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Paradrup conditions are usually best between late evening and early morning, and poor in the afternoon due to rain showers and extensive cloudiness. Conditions are favorable for paradrups 45-95 percent of the time.

7. ASTRONOMICAL DATA. Caracas, Venezuela. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	DEC	JAN	FEB	MAR	APR
First Light	0614	0627	0626	0614	0555
Last Light	1831	1847	1857	1859	1900

(Prepared: 15 June 1981)

MAY - NOVEMBER

1. GENERAL. The rainy season is cloudy, humid, and frequently hot. Mean cloud cover varies from 35 percent along the northern coast to 85 percent in the interior. Mean daily minimum temperatures range from 58F to 78F. Maximums range from 75F to 100F. Precipitation increases inland usually occurring as rain showers or thunderstorms. Flooding is often a serious problem throughout low-lying areas. Gale force winds (28 knots or greater) are infrequent but do occur in association with thunderstorms.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-50 percent of the time; less than 1500/3, 5-35 percent, and less than 500/1, 5-10 percent of the time. Marginal flying weather occurs most often as a result of heavy afternoon thunderstorms.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 5-10 days per month.

4. TERMINAL WEATHER. Caracas, Venezuela. Generally good. Poor during June and July due to afternoon thunderstorms. Ceiling/visibility less than 300/1 occurs 3-10 percent of the time with highest frequencies during late afternoon hours.

5. EXPOSURE WEATHER. Hot days, warm nights, and high humidity makes conditions uncomfortable. Rain showers and thunderstorms are frequent during the afternoon.

<u>CARACAS, VENEZUELA</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)							
Absolute Maximum	89	86	85	88	87	89	87
Mean Maximum	80	78	77	78	79	79	77
Mean Minimum	62	62	61	61	61	61	60
Absolute Minimum	52	53	52	53	53	54	51
MEAN PRECIPITATION (INCHES)	3.2	3.9	4.0	4.3	4.1	4.3	3.7
MEAN NUMBER OF DAYS							
Precipitation	10	14	16	15	13	13	14
Thunderstorms	3	4	5	5	7	6	3

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops 55-95 percent of the time. Morning is the best time for paradrops.

7. ASTRONOMICAL DATA. Caracas, Venezuela. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0543	0543	0550	0556	0556	0555	0600
Last Light	1904	1913	1916	1908	1849	1831	1832

SITUATION CLIMATIC BRIEFS

PART G

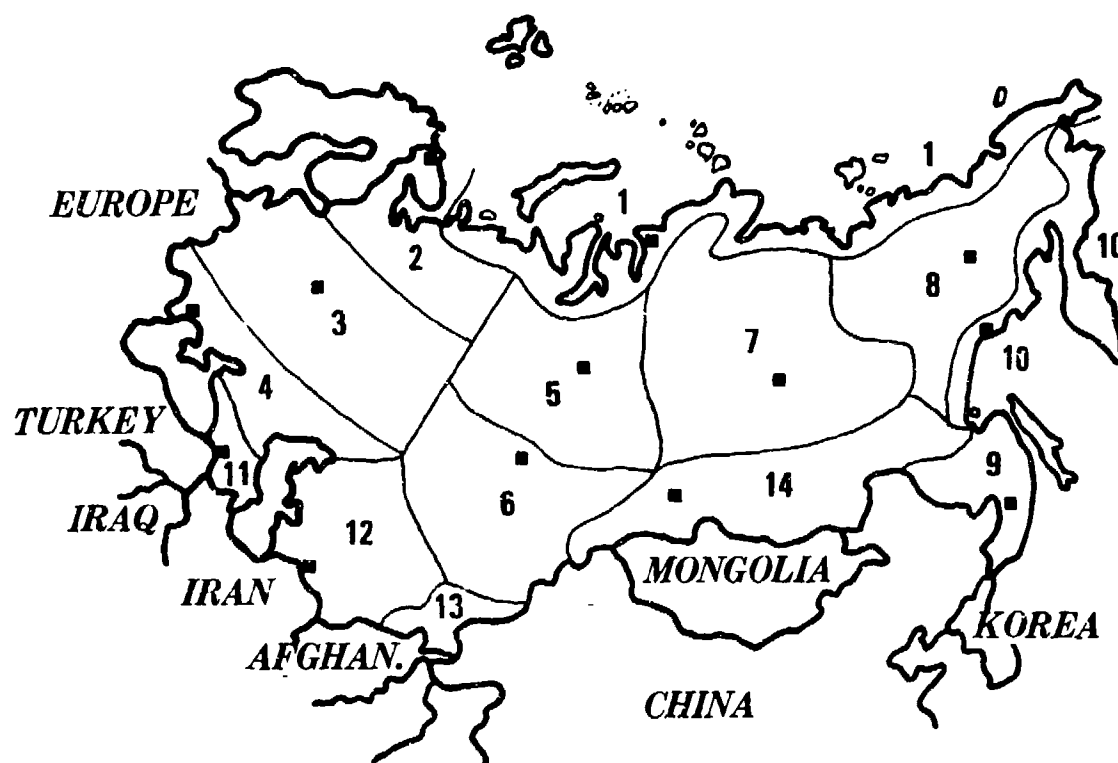
NORTH AMERICA

SITUATION CLIMATIC BRIEFS

PART H

USSR AND MONGOLIA P.R.

USSR REGIONAL INDEX



REGIONAL NUMBERING SYSTEM KEY

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| 2 - NORTHWESTERN USSR | 8 - EASTERN SIBERIAN MOUNTAINS |
| 3 - WESTERN USSR | 9 - SOUTHEASTERN USSR |
| 4 - SOUTHWESTERN USSR | 10 - EASTERN COAST & ISLANDS |
| 5 - WESTERN SIBERIAN PLAIN | 11 - TRANSCAUCASIA |
| 6 - WESTERN STEPPES | 12 - TURAN LOWLANDS |
| ■ REPRESENTATIVE WEATHER SITES | 13 - TIEN SHAN MOUNTAINS |
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Figure 2. USSR- Regional Index.

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(Prepared: 25 February 1982)

SITUATION CLIMATIC BRIEF

MONGOLIA

DECEMBER - FEBRUARY

1. GENERAL. Winter is dry and extremely cold with mostly clear skies and infrequent light snow. Mean cloud cover varies from 20-40 percent over the plains region and Gobi Desert in the south to 30-60 percent in the northern mountains. Temperatures vary little throughout the season. Mean daily minimum temperatures vary from -5F to -25F across the plains and -10F to -30F in the northern and western mountains. Average maximum temperatures range from about -15F at mountain locations and the northern plains to 25F along the southern fringes of the Gobi Desert. Snowfall occurs up to 3 days per month with only meager accumulations. Winds are normally light everywhere except at the highest mountain elevations where gale force winds (28 knots or greater) occur up to 5 percent of the time during the afternoon.

2. FLYING WEATHER. Good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 3-15 percent of the time; less than 1500/3, 2-10 percent; and less than 500/1, up to 5 percent. Mountain-wave turbulence is a frequent flight hazard over the northwestern and north central mountains of Mongolia.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur from 12 to 25 days per month. Conditions are usually the worst over the northern and western mountain ranges during the afternoon as cloudiness reaches maximum coverage.

4. TERMINAL WEATHER. Ulan Bator, Mongolia. Good. Ceiling/visibility less than 300/1 occurs up to 2 percent of the time.

5. EXPOSURE WEATHER. With chill temperatures commonly between -25F and -50F, outdoor activities are oftentimes severely restricted. Equipment might often be adversely affected also.

<u>ULAN BATOR, MONGOLIA</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	32	21	35
Mean Maximum	5	-2	10
Mean Minimum	-19	-27	-22
Absolute Minimum	-45	-47	-48
MEAN PRECIPITATION (INCHES)	0.1	*	*
MEAN NUMBER OF DAYS			
Snowfall	2	2	2

* = less than 0.05 inch

6. PARADROP WEATHER. Good to fair. Favorable paradrop conditions occur from 60 to 95 percent of the time. The high frequency of winds exceeding 13 knots at mountainous locations during the afternoon adversely affects paradrops.

7. ASTRONOMICAL DATA. Ulan Bator, Mongolia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0758	0802	0728
Last Light	1736	1801	1846

(Prepared: 25 February 1982)

MARCH - MAY

1. GENERAL. Spring is a season of transition from cold and arid conditions in March to mild temperatures and cloudy skies by May. Mean cloudiness varies from 45 to 75 percent at mountain locations to an average of 55 percent throughout the Gobi Desert and plains region. Mean daily minimum temperatures range from -15F in the northern mountains during March to 20-45F in the Gobi Desert by May, while maximums vary from 10F (March at higher elevations) to 70F in the southern plains during May. Precipitation changes from light snow during March and April to rain by May and falls on an average of 3-8 days per month. Most of the country has only two thunderstorm days per month. Gale force winds (28 knots or greater) are rare except at the higher northern elevations where they occur an estimated 5 percent of the time during the afternoon.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-10 percent of the time in the southern and eastern plains and 30 percent along the mountain slopes of the west and north; less than 1500/3, 5-10 percent; and less than 500/1, 2-5 percent. Conditions most likely to affect flying are the occasional lines of thunderstorms in the northern mountains, the migratory storms which traverse the southern plains region and bring short periods of lower ceilings/visibilities, and the frequent formation of mountain-wave turbulence, particularly over the western mountains.

3. RECONNAISSANCE WEATHER. Fair to poor over the southern plains. Fair over the northern mountains region. Sky cover of 2/8 or less and visibility of 3 miles or greater vary from 5 to 20 days per month with the best weather occurring during the late afternoon and evening.

4. TERMINAL WEATHER. Ulan Bator, Mongolia. Good. Ceiling/visibility less than 300/1 occurs less than 2 percent of the time.

5. EXPOSURE WEATHER. Equivalent chill temperatures commonly range between 15F and -15F during March, making this one of the more uncomfortable regions in Asia. Conditions tend to moderate by May, however, and daytime temperatures become quite mild.

ULAN BATOR, MONGOLIA	MAR	APR	MAY
TEMPERATURE (F)			
Absolute Maximum	64	76	87
Mean Maximum	26	45	55
Mean Minimum	-5	18	29
Absolute Minimum	-39	-11	3
MEAN PRECIPITATION (INCHES)	0.1	0.2	0.3
MEAN NUMBER OF DAYS			
Precipitation	2	2	3
Snowfall	2	1	1

6. PARADROP WEATHER. Good during March. Fair during April and May due to the increased frequency of gusty surface winds and precipitation. Favorable paradrop conditions occur between 60 and 90 percent of the time. The optimal period for operations is from late evening to early morning.

7. ASTRONOMICAL DATA. Ulan Bator, Mongolia. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	MAR	APR	MAY
First Light	0636	0532	0438
Last Light	1927	2014	2100

(Prepared: 25 February 1982)

JUNE - AUGUST

1. GENERAL. Summers vary from mild and cloudy conditions over the northern mountains to partly cloudy skies and warmer temperatures in the plains region and Gobi Desert. Cloud cover varies between 60 and 80 percent. Mean daily minimum temperatures range from 38F to 63F. Maximums are often in the 70's and 80's. Precipitation, usually rain showers, occurs on 5 to 18 days per month; accumulations are about 2 inches per month. Thunderstorms occur on 2-5 days per month in the northern mountains region and up to 10 days per month farther south over the plains. Gale force winds (28 knots or greater) are rare at most locations but can occur at the higher elevations especially in conjunction with afternoon thunderstorms. Over the desert regions of southern Mongolia, dust/sandstorms occur on several days each month lasting for 2 to 4 hours each time. Mirages are fairly common on clear, hot afternoons especially over the most barren areas.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-40 percent of the time in the northern mountains region, but up to 60 percent of the time during afternoons throughout the plains region; less than 1500/3, 5-15 percent; and less than 500/1, up to 5 percent. Thunderstorms and rain showers are frequent in the eastern plains sections, but isolated at northern locations. Low-level turbulence is common over the most rugged portions of northern and western Mongolia, reaching greatest intensity during afternoon hours.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-20 days per month. Poorest conditions occur during the afternoon at northern mountain locations when cloud cover reaches peak amounts.

4. TERMINAL WEATHER. Ulan Bator, Mongolia. Good to fair. Ceiling/visibility less than 300/1 occurs up to 2 percent of the time. Afternoon rain showers and thunderstorms occasionally lower ceiling/visibility conditions for brief periods, making terminal conditions only fair.

5. EXPOSURE WEATHER. Even with high humidities, mild temperatures result in overall comfortable exposure conditions.

<u>ULAN BATOR, MONGOLIA</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	97	92	93
Mean Maximum	69	71	69
Mean Minimum	43	50	45
Absolute Minimum	22	34	20
MEAN PRECIPITATION (INCHES)	1.0	2.9	1.9
MEAN NUMBER OF DAYS			
Precipitation	5	10	8

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops from 60 to 80 percent of the time. Evening is the best time for operations.

7. ASTRONOMICAL DATA. Ulan Bator, Mongolia. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0411	0428	0512
Last Light	2134	2127	2041

(Prepared: 25 February 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a season of transition from partly cloudy to fair skies and mild to cold temperatures. Cloud cover averages 40-60 percent in September, but decreases to 30-40 percent by November. Mean daily minimum temperatures decrease from about 40F in September to a range of -10F to 10F in November. Maximums vary from 55-70F in September to 15-35F during November. Precipitation changes from rain during September/October to light and infrequent snow by November. Both thunderstorms and gale force winds (28 knots or greater) are infrequent, but occasionally accompany the regions migratory storms. Dust/sandstorms decrease in frequency throughout the season and are primarily confined to the Gobi Desert and southern plains.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-25 percent of the time during September, but only 5-10 percent during October/November; less than 1500/3, 5-10 percent (northern mountains region) to 1-5 percent (plains region); and less than 500/1, up to 3 percent. Over the plains region, occasional dust/standstorms severely restrict flight operations below 1000 feet. Over the northern mountains region severe weather associated with squall lines briefly cause hazardous flying conditions. The mountain wave is a frequent source of turbulence over the western and northern mountain ranges, causing extremely hazardous conditions on the lee side of ranges.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-25 days each month throughout the southern plains but only 5-15 days per month over the western and northern mountains. October tends to be the best month for reconnaissance.

4. TERMINAL WEATHER. Ulan Bator, Mongolia. Good. Ceiling/visibility less than 300/1 occurs less than 1 percent of the time.

5. EXPOSURE WEATHER. The season becomes increasingly uncomfortable with mostly mild temperatures in September but chill temperatures as low as -10F during November.

ULAN BATOR, MONGOLIA	SEP	OCT	NOV
TEMPERATURE (F)			
Absolute Maximum	83	73	52
Mean Maximum	59	44	22
Mean Minimum	34	17	-4
Absolute Minimum	5	-16	-32
MEAN PRECIPITATION (INCHES)	0.8	0.2	0.2
MEAN NUMBER OF DAYS			
Precipitation	3	2	2
Snowfall	*	1	2

* = less than 0.5 day

6. PARADROP WEATHER. Good to fair. Favorable paradrop conditions can be expected from 60 to 90 percent of the time. Occasional gusty afternoon surface winds, especially over the eastern and southern Plains Region, reduce the probability of successful operations.

7. ASTRONOMICAL DATA. Ulan Bator, Mongolia. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	SEP	OCT	NOV
First Light	0557	0639	0723
Last Light	1938	1837	1750

(Prepared: 6 April 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS ALTAI AND SAYAN MOUNTAINS

DECEMBER - FEBRUARY

1. GENERAL. Winters are bitterly cold with persistent cloud cover and occasional light snow. Mean daily maximum temperatures range from zero to 15F. Mean daily minimum temperatures range from zero to -15F. Mean cloudiness is 45-65 percent. Snow falls on 3-10 days per month, with monthly precipitation totals of less than 1 inch. Gale force winds are rare.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-70 percent of the time; less than 1500/3, 15-35 percent; and less than 500/1, less than 10 percent. Precipitation is usually light and brief. Turbulence should be expected near and to the lee of mountain peaks.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 5-15 days per month.

4. TERMINAL WEATHER. Minusinsk, USSR. Fair. Cloud ceilings are rarely low enough to restrict flying operations. Ceiling/visibility less than 300/1 occurs only about 5 percent of the time. Icy runway conditions can be expected.

5. EXPOSURE WEATHER. The severe cold is hard on both equipment and personnel.

<u>MINUSINSK, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	42	38	41
Mean Maximum	0	-2	10
Mean Minimum	-8	-12	-14
Absolute Minimum	-59	-57	-45
<u>MEAN PRECIPITATION (INCHES)</u>	0.4	0.3	0.2
<u>MEAN NUMBER OF DAYS</u>			
Snowfall	6	4	4
Thunderstorms	0	0	0

6. PARADROP WEATHER. Fair to Good. Conditions are favorable 60-80 percent of the time.

7. ASTRONOMICAL DATA. Minusinsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0920	0922	0837
Last Light	1816	1844	1938

(Prepared: 6 April 1982)

MARCH - MAY

1. GENERAL. Spring is cloudy and cold with frequent light precipitation. Mean cloudiness is 30-50 percent during the early morning, but increases to 50-75 percent during late morning and afternoon hours. Mean daily maximum temperatures

are in the 20's (F) in March, the 40's in April, and the high 50's to low 60's in May. Mean daily minimum temperatures are near zero in March, the 20's in April, and the 30's in May. Precipitation falls on 5-10 days per month with precipitation totals less than 1 inch in March and April, 1-2.5 inches in May. Thunderstorms occur on 2-3 days in May, but are rare in March and April. Gale force winds (28 knots or greater) occur on up to 3 days per month.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-70 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1, less than 10 percent. Temperatures during late spring are conducive to severe clear icing at lower altitudes. The rugged terrain often causes severe updrafts and downdrafts to occur. While quantitative data is lacking, this is believed to be a frequent hazard over this area.

3. RECONNAISSANCE WEATHER. Fair. Total sky cover of 2/8 or less and visibility 3 miles or greater occur on 10-15 days per month.

4. TERMINAL WEATHER. Minusinsk, USSR. Fair. Skies are frequently overcast, based at 1500-3000 feet with occasional brief showers. Ceiling/visibility less than 300/1 occurs 3-8 percent of the time. Severe clear icing and terrain-induced turbulence often occur at lower altitudes.

5. EXPOSURE WEATHER. Flash flooding occurs during periods of heavy showers, which are most frequent in May. Snow cover lasts until late April or early May at most locations. Temperatures are cold in March, but become quite mild during May.

<u>MINUSINSK, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	56	77	88
Mean Maximum	22	44	60
Mean Minimum	1	24	39
Absolute Minimum	-40	-13	12
MEAN PRECIPITATION (INCHES)	0.2	0.6	1.3
MEAN NUMBER OF DAYS			
Precipitation	5	6	11
Snowfall	5	3	2
Thunderstorms	0	0	1

6. PARADROP WEATHER. Good. Favorable conditions occur on 20 days or more per month.

7. ASTRONOMICAL DATA. Minusinsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0733	0615	0506
Last Light	2031	2131	2232

(Prepared: 6 April 1982)

JUNE - AUGUST

1. GENERAL. Summer is cloudy and mild with frequent showers and thunderstorms. Mean cloudiness is 55-80 percent. Precipitation occurs on 8-16 days per month with monthly precipitation totals of 1-3 inches. Thunderstorms occur on 3-6 days per month. Mean daily maximum temperatures are 65F to 80F. Mean daily minimum

temperatures are 45F to 60F. Gale force winds (28 knots or greater) occur on 1-3 days per month.

2. FLYING WEATHER. Fair. Extensive cloud cover, strong gusty surface winds, and frequent thunderstorms hinder flying operations. Ceiling/visibility less than 5000 feet and/or 6 miles occur 40-70 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1, 2-8 percent.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 10 days or less per month.

4. TERMINAL WEATHER. Minusinsk, USSR. Fair. The weather is cloudy with frequent showers and thunderstorms. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time.

5. EXPOSURE WEATHER. The weather is cloudy and windy with frequent showers and thunderstorms. Temperatures remain mild.

<u>MINUSINSK, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	98	104	101
Mean Maximum	72	76	72
Mean Minimum	52	56	53
Absolute Minimum	28	37	32
MEAN PRECIPITATION (INCHES)	2.1	2.3	2.2
MEAN NUMBER OF DAYS			
Precipitation	8	11	11
Thunderstorms	2	3	3

6. PARADROP WEATHER. Poor. Cloudy skies, strong low-level winds, and frequent precipitation impact this type of operation. Conditions are favorable less than 40 percent of the time.

7. ASTRONOMICAL DATA. Minusinsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0429	0453	0552
Last Light	2318	2306	2204

(Prepared: 7 April 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is cloudy with frequent fog and precipitation. Temperatures and hours of daylight decrease as the season progresses. Mean cloudiness is 60-90 percent. Fog occurs on up to 5 days per month, but is usually confined to late night and early morning hours. Precipitation occurs on 10-15 days per month with monthly totals of 1-2 inches. The precipitation is mainly rain in September, but it gradually changes to snow by November. Mean daily maximum temperatures decrease rapidly from 55-70F in September to 40-50F in October, and 20-25F in November. Minimum temperatures average 35-45F in September, 25-35F in October, and 5-15F in November. Thunderstorms and gale force winds are rare.

2. FLYING WEATHER. Fair. Extensive cloud cover prevails with a tendency for maximum cloudiness to occur in the morning and afternoon and minimum cloudiness to occur late at night. Visibility is often restricted with fog, snow, and blowing snow. Ceiling/visibility less than 5000 feet and/or 6 miles occurs over

60 percent of the time; less than 1500/3, 10-30 percent; and less than 500/1, 3-10 percent. Turbulence can be expected over and to the lee of mountain peaks, which are often obscured by clouds.

3. RECONNAISSANCE WEATHER. Poor. Cloud cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Minusinsk, USSR. Fair. Frequent and persistent cloud cover hinders flying operations throughout this season. Fog frequently restricts visibility during late evening through early morning hours. The low temperatures combined with frequent precipitation make icy runway conditions likely. Ceiling/visibility less than 300/1 occurs about 5 percent of the time.

5. EXPOSURE WEATHER. Temperatures are mild in September, however they drop sharply during October and November with mean maximum temperatures well below freezing.

<u>MINUSINSK, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	84	71	52
Mean Maximum	60	41	22
Mean Minimum	40	26	7
Absolute Minimum	19	-18	-32
MEAN PRECIPITATION (INCHES)	1.4	0.7	0.6
MEAN NUMBER OF DAYS			
Precipitation	9	10	8
Snowfall	*	5	8
Thunderstorms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Frequent precipitation and persistent cloud cover below 1500 feet are the main restrictions. Favorable conditions occur on 12-18 days per month. Late night is generally the best time.

7. ASTRONOMICAL DATA. Minusinsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0651	0745	0839
Last Light	2046	1934	1836

(Prepared: 11 March 1981)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS ARCTIC COAST AND NORTHERN ISLANDS

DECEMBER - FEBRUARY

1. GENERAL. Arctic winters are bitterly cold with cloudy skies, high humidity, and occasional snow showers. Mean daily maximum temperatures vary from -10F to -20F. Mean minimums vary from -30F to -40F. Mean cloudiness is 55-65 percent. Relative humidity is 75-85 percent. Snow showers occur on 8-18 days, but are usually brief with scant accumulations. Monthly mean precipitation is less than 1 inch. Gale force winds (28 knots or greater) occur on up to 9 days per month. Thunderstorms are rare during this season.

2. FLYING WEATHER. Poor. Low overcast skies occur frequently. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-60 percent of the time; less than 1500/3, 20-50 percent; and less than 500/1, 15-35 percent. Low-level winds are frequently strong.

3. RECONNAISSANCE WEATHER. Fair to Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 8-18 days per month. Persistent cloud cover is the main restriction.

4. TERMINAL WEATHER. Ostrov Dikson, USSR. Poor. Gusty surface winds often occur with low ceilings and icy runways to hinder operations. Surface winds exceed 27 knots on 8-9 days each month. Ceiling/visibility less than 300/1 occur 25-35 percent of the time.

5. EXPOSURE WEATHER. The extreme cold severely limits outdoor activity. Frequent, strong surface winds and low temperatures make extremely severe equivalent wind chill conditions.

<u>OSTROV DIKSON, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	31	31	30
Mean Maximum	-1	-5	-3
Mean Minimum	-17	-20	-19
Absolute Minimum	-49	-51	-55
MEAN PRECIPITATION (INCHES)	0.6	0.7	0.5
MEAN NUMBER OF DAYS			
Snowfall	17	18	13
Thunderstorms	0	0	0

6. PARADROP WEATHER. Fair. Winds in excess of 13 knots and/or ceilings below 1500 feet are the primary restrictions to paradrop operations. Conditions are favorable for paradrops on 8-15 days per month.

7. ASTRONOMICAL DATA. Ostrov Dikson, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0319	0258	0120
Last Light	0839	0926	1130

(Prepared: 16 April 1982)

MARCH - MAY

1. GENERAL. Spring is cloudy, humid, and cold with frequent light precipitation and gusty surface winds. Mean cloudiness is 50-75 percent. Relative humidity is 75-85 percent. Mean daily maximum temperatures, consistently below zero (F) in March, rise into the mid 20's by May. Mean daily minimum temperatures also rise as the season progresses, from about -10F to -20F in March to the mid teens by May. Brief showers of light snow occur on up to 20 days per month. Amounts are small, with monthly total precipitation less than 1 inch. Gale force winds (28 knots or greater) are frequent, occurring on up to 8 days each month. Thunderstorms are rare.

2. FLYING WEATHER. Fair. Dense fog and low clouds often affect this region and may persist for several days at a time. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-80 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1 up to 20 percent of the time. Strong low-level winds and associated moderate turbulence are frequent hazards. Temperatures during late spring are in the range conducive to severe clear icing at the lower levels.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Ostrov Dikson, USSR. Poor. Broken to overcast cloud cover is the norm. Aircraft icing is common in the lower flight levels. Runway surfaces are often icy. Strong low-level winds and associated turbulence are common. Ceiling/visibility less than 300/1 occurs about 20 percent of the time.

5. EXPOSURE WEATHER. Cold temperatures and gusty surface winds create severe wind chill conditions.

<u>OSTROV DIKSON, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	28	33	45
Mean Maximum	-5	+6	22
Mean Minimum	-18	-8	12
Absolute Minimum	-51	-36	-20
MEAN PRECIPITATION (INCHES)	0.6	0.6	0.7
MEAN NUMBER OF DAYS			
Precipitation	18	15	16
Snowfall	13	13	13
Thunderstorms	0	0	0

6. PARADROP WEATHER. Poor. Ceilings less than 1500 feet and/or winds in excess of 13 knots are the primary restrictions. Favorable conditions occur only 30-40 percent of the time.

7. ASTRONOMICAL DATA. Ostrov Dikson, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	2329	2101	**
Last Light	1254	1504	**

** = When sunlight, twilight, or darkness exceeds 24 hours, the beginning and end of such intervals are physically uncertain and no limits of precision can be stated.

(Prepared: 14 April 1982)

JUNE - AUGUST

1. GENERAL. Summer is cold, cloudy, foggy, and wet. Mean daily temperatures vary from maximums in the 30's (F) to minimums in the 20's. Skies are mostly overcast with mean cloudiness about 80-90 percent. Fog occurs frequently--some stations report fog on up to 23 days each month. Precipitation falls on 10-20 days per month, with monthly amounts of 1-3 inches. Gale force winds (28 knots or greater) occur on 2-3 days per month. Thunderstorms occur on 2 days or less per month.

2. FLYING WEATHER. Poor. Dense fog and low clouds often persist over the area for days at a time. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 60-90 percent of the time; less than 1500/3, 50-80 percent; and less than 500/1, up to 45 percent of the time. Temperatures are in the range conducive to severe clear icing at the lower levels.

3. RECONNAISSANCE WEATHER. Poor. Total cloud cover of 2/8 or less and visibility 3 miles or greater occurs on only 10 days per month or less.

4. TERMINAL WEATHER. Ostrov Dikson, USSR. Poor. Persistent dense fog and low cloud cover restrict flying operations during this season. Ceiling/visibility less than 300/1 are occur approximately 30 percent of the time.

5. EXPOSURE WEATHER. Frequent dense fog and cold temperatures can make outdoor activities difficult.

<u>OSTROV DIKSON, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	67	81	75
Mean Maximum	35	46	46
Mean Minimum	29	36	37
Absolute Minimum	3	27	26
MEAN PRECIPITATION (INCHES)	0.9	1.2	1.6
MEAN NUMBER OF DAYS			
Precipitation	13	13	16
Snowfall	9	1	2
Thunderstorms	*	1	1

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrops only 20-40 percent of the time.

7. ASTRONOMICAL DATA. Ostrov Dikson, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	**	**	0144
Last Light	**	**	2233

** = When sunlight, twilight, or darkness exceeds 24 hours, the beginning and end of such intervals are physically uncertain and no limits of precision can be stated.

(Prepared: 16 April 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is cloudy and cold with frequent fog and precipitation. Temperatures and hours of daylight decrease as the season progresses. Mean cloudiness is 60-90 percent. Mean daily maximum temperatures, in the 30's (F) during September, drop below zero during November. Mean daily minimum temperatures are near the freezing point in September, but range from -10F to -20F in November. Fog occurs on up to 15 days per month, but amounts are small, averaging 2 inches or less per month. Precipitation is mainly in the form of brief snow showers. Gale force winds (28 knots or greater) occur on up to 6 days per month. Thunderstorms are rare during this season.

2. FLYING WEATHER. Poor. Dense fog and low clouds often persist over the area. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-70 percent of the time; less than 1500/3, 20-40 percent; less than 500/1, 5-15 percent of the time. Icing and turbulence are frequent hazards when flying at low levels. By mid-November there are less than 8 hours of available sunlight.

3. RECONNAISSANCE WEATHER. Poor. Cloud cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Ostrov Dikson, USSR. Fair. Frequent and persistent cloud cover hinders flying operations throughout this season. The low temperatures combined with frequent precipitation make icy runway conditions likely. Ceiling/visibility less than 300/1 occurs about 8 percent of the time.

5. EXPOSURE WEATHER. The combination of low temperatures and occasionally strong winds lead to severe wind chill conditions. There are few daylight hours.

<u>OSTROV DIKSON, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	63	40	32
Mean Maximum	39	24	9
Mean Minimum	32	16	-6
Absolute Minimum	10	-17	-45
MEAN PRECIPITATION (INCHES)	1.5	1.1	0.8
MEAN NUMBER OF DAYS			
Precipitation	19	22	19
Snowfall	13	20	17
Thunderstorms	0	0	0

6. PARADROP WEATHER. Fair. Favorable conditions occur on an average of 10-20 days per month with the hours of 20-06 LST generally the most favorable.

7. ASTRONOMICAL DATA. Ostrov Dikson, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	2221	0010	0159
Last Light	1338	1130	0940

(Prepared: 22 March 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS EASTERN COAST AND ISLANDS

DECEMBER - FEBRUARY

1. GENERAL. Winter along the eastern coast and islands of the USSR is cloudy, cold, and windy with frequent precipitation. Mean cloudiness varies from a minimum of about 30 percent at locations bordering the Sea of Okhotsk to 50-75 percent at locations along the Bering Sea and over the Kamchatka Peninsula. Mean daily minimum temperatures range from near 10F along the southeastern coast of Kamchatka to -15F at northeastern coastal locations. Maximums are generally between zero and 25F, with highest temperatures along the southeast coast of Kamchatka. Precipitation, usually snow, occurs up to 18 days per month at northeastern coastal locations and on the island of Nikol'skoye. Winds are quite often light at interior locations, but they reach gale force (28 knots or greater) up to 15 days per month at exposed coastal and island locations.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-40 percent of the time; less than 1500/3, 10-30 percent; and less than 500/1, 5-15 percent. In addition to low ceilings and visibilities, precipitation, turbulence, and aircraft icing may restrict flight operations. Conditions are favorable for the formation of mountain-wave turbulence over the peninsula of Kamchatka, a flight hazard which might be encountered at nearly all altitudes.

3. RECONNAISSANCE WEATHER. Poor to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater vary from 5-15 days per month. The worst conditions are caused by extensive morning cloudiness along the northern coast of the Sea of Okhotsk.

4. TERMINAL WEATHER. Okhotsk, USSR. Good. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time.

5. EXPOSURE WEATHER. Very cold, humid, and windy days are the norm at most locations. Equivalent chill temperatures at northeast coastal locations drop to -30F, on occasion.

<u>OKHOTSK, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	34	37	32
Mean Maximum	0	-4	4
Mean Minimum	-10	-15	-12
Absolute Minimum	-40	-40	-49
MEAN PRECIPITATION (INCHES)	0.4	0.4	0.2
MEAN NUMBER OF DAYS			
Snowfall	4	4	3

6. PARADROP WEATHER. Poor to fair. Conditions are favorable for paradrops only 30-60 percent of the time due to a high frequency of strong winds and snowfall, especially along the northeastern coasts. Late afternoon to early morning is the best time of day for paradrops.

7. ASTRONOMICAL DATA. Okhotsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0923	0919	0820
Last Light	1722	1753	1902

(Prepared: 23 March 1982)

MARCH - MAY

1. GENERAL. Spring along the eastern coast and islands is marked by mostly cloudy skies, frequent precipitation, and moderating daytime temperatures. Cloudiness increases in much of the region throughout spring and averages of 50-85 percent. Mean daily minimum temperatures increase from -10F to 10F during March to 20-35F by May. Maximums increase from 10-30F in March to 35-45F by May; the coldest temperatures during any month are mostly confined to the northeastern coasts. It snows in March, but rain is equally likely to occur by May; 5-15 days of precipitation per month is usual with monthly accumulations of up to 2 inches. Thunderstorms are rare. Gale force winds (28 knots or greater) occur on 5-10 days per month at most locations.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-60 percent of the time; less than 1500/3, 15-30 percent; and less than 500/1, 5-15 percent. The chief causes of poor flying weather are frequent precipitation, low ceilings/visibilities at the peninsular locations of eastern Kamchatka, aircraft icing, and turbulence. Mountain-wave turbulence at nearly any altitude is probable over the peninsula of Kamchatka.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur from 7-14 days during March, but only 3-8 days per month by May. Cloudiness is minimal in the late afternoon during March.

4. TERMINAL WEATHER. Okhotsk, USSR. Good in March. Occasionally poor by May. Ceiling/visibility less than 300/1 increase from 3 percent of the time during March to 15 percent by May, largely a result of increased early morning sea fog and low clouds throughout the spring.

5. EXPOSURE WEATHER. While March is cold and windy, conditions become slightly more comfortable by late May as temperatures rise and winds diminish.

<u>OKHOTSK, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	39	48	79
Mean Maximum	17	29	40
Mean Minimum	-4	12	29
Absolute Minimum	-35	-29	3
MEAN PRECIPITATION (INCHES)	0.2	0.5	1.9
MEAN NUMBER OF DAYS			
Precipitation	5	7	7
Snowfall	5	7	5

6. PARADROP WEATHER. Fair. Due to the high frequency of strong winds during March and morning fog and low clouds in May, overall paradrop conditions are favorable only 50-75 percent of the time. Generally, inland locations have the best paradrop weather while the northeastern coastline is frequently poor.

7. ASTRONOMICAL DATA. Okhotsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0703	0527	0353
Last Light	2008	2126	2253

(Prepared: 24 March 1982)

JUNE - AUGUST

1. GENERAL. Cloudy skies, frequent precipitation, and mild temperatures prevail throughout the summer. Mean cloudiness varies from 70-90 percent with the greatest coverage occurring during morning hours. Mean daily temperatures show only a slight warming trend through the summer months; minimums range from 30F to 50F, maximums from 45F to 65F. Snow occasionally falls at a few of the northernmost coastal locations, but rain is the typical form of precipitation, occurring up to 15 days per month. Thunderstorms are rare. Gale force winds (28 knots or greater) are infrequent at most locations, but are up to 3 days per month on the island of Nikol'skoye.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-60 percent of the time; less than 1500/3, 15-35 percent; and less than 500/1, 10-25 percent. The worst conditions occur during the morning as low clouds and sea fog move inland; they sometimes persist through late morning. The mountain ridges of Kamchatka are frequently obscured by clouds during the afternoon. Aircraft icing is occasionally encountered in heavy showers over the northeastern coastal area.

3. RECONNAISSANCE WEATHER. Poor. Extensive cloud cover and morning fog significantly limit reconnaissance operations. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on only 3-9 days per month. Best conditions normally occur between late afternoon and early morning.

4. TERMINAL WEATHER. Okhotsk, USSR. Poor to fair. Ceiling/visibility less than 300/1 occurs about 30 percent of the time during the morning, but only 15 percent in the afternoon. Generally, improvement occurs through the summer as low ceilings become less frequent.

5. EXPOSURE WEATHER. Although temperatures are mild, the frequent and, occasionally heavy, precipitation can restrict outdoor activities.

<u>OKHOTSK, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	88	88	90
Mean Maximum	49	59	61
Mean Minimum	39	49	49
Absolute Minimum	28	36	34
MEAN PRECIPITATION (INCHES)	1.7	2.6	2.2
MEAN NUMBER OF DAYS			
Precipitation	8	10	9
Snowfall	3	0	0
Thunderstorms	*	2	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrops only 50-70 percent of the time due to low clouds and frequent precipitation. Late afternoon to early morning is the best time for paradrops because winds are light and precipitation is least likely.

7. ASTRONOMICAL DATA. Okhotsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0240	0323	0454
Last Light	0015	2343	2210

(Prepared: 26 March 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a transitional season varying from the typically cloudy, mild, and windy conditions of September to the frequent snow flurries and very cold temperatures of November. Average cloudiness varies from about 55-80 percent with most locations reporting a slight decrease in cloud amounts through the season. Mean daily minimum temperatures decrease from the 30's (F) in September to 5-15F by November. Mean maximums drop from the 50's during September to the teens and 20's of November. Precipitation, usually rain in early autumn, becomes mainly snow by November. Precipitation occurs on 5-15 days per month with highest frequencies reported over the peninsula of Kamchatka. As the season progresses, gale force winds (28 knots or greater) increase in frequency, occurring up to 10-15 days per month at northeastern capes and on the island of Nikol'skoye.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-65 percent of the time; less than 1500/3, 10-25 percent; and less than 500/1, 5-15 percent. The highest frequency of low ceilings and visibilities occurs over the northeastern sections of the region during the morning. Migratory lows and their attendant fronts bring frequent precipitation and an increased potential for aircraft icing and turbulence to most locations by October. Conditions are highly favorable for mountain-wave turbulence over the peninsula of Kamchatka at all altitudes.

3. RECONNAISSANCE WEATHER. Poor to fair. Reconnaissance weather is usually favorable along the northern shores of the Sea of Okhotsk. Sky cover 2/8 or less and visibility 3 miles or greater occur between 3-17 days per month. The period between late afternoon and early morning offers the most favorable conditions.

4. TERMINAL WEATHER. Okhotsk, USSR. Fair to poor. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time. The highest probability of such occurrence is during the morning hours when sea fog and/or low clouds move inland from the Sea of Okhotsk.

5. EXPOSURE WEATHER. While September is generally mild, by November strong winds, snow flurries, and chill temperatures ranging from 0-20F is the rule.

<u>OKHOTSK, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	75	61	41
Mean Maximum	54	35	12
Mean Minimum	40	22	1
Absolute Minimum	16	-6	-35
MEAN PRECIPITATION (INCHES)	2.1	1.5	1.0
MEAN NUMBER OF DAYS			
Precipitation	11	6	4
Snowfall	*	4	4

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paradrop operations only 40-70 percent of the time due to the high frequency of strong winds and precipitation. Additionally, low ceilings across the west coast and northwestern panhandle of Kamchatka during the morning can, on occasion, reduce the likelihood of successful paradrops.

7. ASTRONOMICAL DATA. Okhotsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0614	0724	0834
Last Light	2032	1904	1751

(Prepared: 5 April 1981)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS CENTRAL SIBERIAN PLATEAU

DECEMBER - FEBRUARY

1. GENERAL. Winters are bitterly cold with persistent cloud cover and frequent light snow flurries. Mean temperatures rarely exceed zero (F) with daily maximum temperatures reaching only -30 to -5 (F), and mean daily minimum temperatures -45F to -20F. Mean cloudiness is 50-70 percent. Snow falls on ten or more days per month in most areas; however, amounts are small, generally less than 1 inch per month. Gale force winds are rare during this season.

2. FLYING WEATHER. Fair. Skies are generally broken to overcast with frequent light snow. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-70 percent of the time; less than 1500/3, 20-35 percent; and less than 500/1, 3-10 percent. Icy runway conditions can be expected.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on 8-15 days per month.

4. TERMINAL WEATHER. Nakanno, USSR. Fair. Skies are usually broken to overcast, but cloud ceilings are rarely low enough to preclude flying operations. Conditions less than 300/1 occur 4-8 percent of the time.

5. EXPOSURE WEATHER. Extreme cold and frequent snow severely limit outdoor activities.

<u>NAKANNO, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	30	30	30
Mean Maximum	-18	-22	-7
Mean Minimum	-30	-32	-27
Absolute Minimum	-78	-72	-72
MEAN PRECIPITATION (INCHES)	0.6	0.5	0.4
MEAN NUMBER OF DAYS			
Snowfall	18	18	13
Thunderstorms	0	0	0

6. PARADROP WEATHER. Fair to good. Favorable conditions occur 50-80 percent of the time.

7. ASTRONOMICAL DATA. Nakanno, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0905	0859	0746
Last Light	1610	1652	1812

(Prepared: 5 April 1982)

MARCH - MAY

1. GENERAL. Spring is characterized by cloudy skies, light precipitation, and rapidly rising temperatures. Mean cloudiness is 60-80 percent with little

diurnal variation. Precipitation occurs on 8-15 days per month with mean monthly amounts of 1.5 inches or less. Warming temperatures bring a change of precipitation type, from practically all snow through March to mostly rain during May. Mean daily temperatures increase nearly 20F per month with maximums of 5F to 20F in March, 40F to 60F in May. Mean daily minimums are zero to -20F in April, 20F to 35F in May. Thunderstorms and gale force winds are rare.

2. FLYING WEATHER. Fair. Cloudiness is both extensive and persistent, but cloud ceilings are rarely low enough to seriously affect flying operations. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-80 percent of the time; less than 1500/3, 15-40 percent; and less than 500/1, less than 10 percent. Temperatures are conducive to severe clear icing at the lower levels during the latter part of the season.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 7-12 days per month in most areas.

4. TERMINAL WEATHER. Nakanno, USSR. Fair. Broken to overcast clouds with bases at 1000-2000 feet are the norm. Light precipitation is common, with occasional snowfall even in May. Ceiling/visibility less than 300/1 occurs about 5 percent of the time. Icy runways are common.

5. EXPOSURE WEATHER. Extensive flooding takes place in the north in spring. Snow cover persists through the end of the season in most areas. Temperatures and equivalent wind chill are often severe during the first half of the season.

<u>NAKANNO, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	46	72	90
Mean Maximum	14	34	49
Mean Minimum	-18	5	27
Absolute Minimum	-60	-35	-18
MEAN PRECIPITATION (INCHES)	0.4	0.7	1.0
MEAN NUMBER OF DAYS			
Precipitation	7	7	9
Snowfall	7	5	3
Thunderstorms	0	0	*

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable on 20 or more days per month at most locations.

7. ASTRONOMICAL DATA. Nakanno, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0618	0427	0220
Last Light	1931	2104	2304

(Prepared: 5 April 1982)

JUNE - AUGUST

1. GENERAL. The summer season is cloudy and cool with frequent showers and thunderstorms. Mean cloudiness is 65-85 percent. Daily maximum temperatures average 60-75F, while daily minimum temperatures average 35-50F. Precipitation occurs on 10-15 days per month with mean monthly amounts of 1.5-3 inches. Thunderstorms occur on up to 10 days per month. Gale force winds are rare.

2. FLYING WEATHER. Poor. Frequent and persistent cloud cover, precipitation, and thunderstorms restrict flying operations. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 60-90 percent of the time; less than 1500/3, 40-70 percent; and less than 500/1, 10 percent or less.

3. RECONNAISSANCE WEATHER. Poor. Total cloud cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Nakanno, USSR. Fair. Five to seven thunderstorms per month can be expected, usually imbedded in overcast skies. Ceiling/visibility less than 300/1 occurs about 5 percent of the time.

5. EXPOSURE WEATHER. Temperatures are mild during summer. Flash flooding can occur during periods of heavy showers.

<u>NAKANNO, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	91	97	95
Mean Maximum	69	75	67
Mean Minimum	41	47	41
Absolute Minimum	14	25	14
<u>MEAN PRECIPITATION (INCHES)</u>	1.5	2.2	2.1
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	13	9	11
Snowfall	*	0	0
Thunderstorms	4	7	3

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Cloud cover below 1500 feet and precipitation are the main restrictions to paradrop operations. Favorable conditions occur 40-60 percent of the time.

7. ASTRONOMICAL DATA. Nakanno, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	**	**	0345
Last Light	**	**	2157

** = When sunlight, twilight, or darkness exceeds 24 hours, the beginning and end of such intervals are physically uncertain and no limits of precision can be stated.

(Prepared: 5 April 1982)

SEPTEMBER - NOVEMBER

1. GENERAL The autumn is cloudy with frequent fog and light precipitation. Temperatures and the hours of daylight decrease as the season progresses. Mean cloudiness is 60-90 percent. Fog occurs on up to 15 days per month, usually during morning hours in September. Precipitation occurs on 12-18 days per month, but amounts are small, averaging 2 inches or less per month. During September the precipitation is mostly rain but as temperatures plummet snow predominates by November. Mean daily maximum temperatures are in the mid 40's to low 60's (F) in September, but fall below zero by November. Mean daily minimum temperatures, near the freezing point in September, fall to the -10F to -20F range by November. Gale force winds (28 knots or greater) and thunderstorms are rare during this season.

2. FLYING WEATHER. Fair. There is frequent and persistent cloud cover. Diurnal patterns are not always clear-cut, but there is a tendency for maximum cloudiness to occur in the late morning and afternoon and minimum cloudiness to occur late at night. Visibility is often restricted with fog, snow, and blowing snow. Smoke and haze are also common at a few industrial centers. Ceiling/visibility less than 5000 feet and/or 6 miles occur over 60 percent of the time; less than 1500/3, 15-30 percent; and less than 500/1, 5-15 percent.

3. RECONNAISSANCE WEATHER. Fair. Frequent and persistent cloud cover impede reconnaissance. Cloud cover of 2/8 or less and visibility 3 miles or greater occur on 8-15 days per month. Early morning is the best time for reconnaissance.

4. TERMINAL WEATHER. Nakanno, USSR. Fair to Poor. Frequent and persistent cloud cover impact flying operations throughout this season. The low temperatures combined with frequent precipitation make icy runway conditions likely.

5. EXPOSURE WEATHER. Temperatures decrease rapidly as the season progresses.

<u>NAKANNO, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	79	64	37
Mean Maximum	51	28	-2
Mean Minimum	31	13	-22
Absolute Minimum	1	-45	-65
MEAN PRECIPITATION (INCHES)	1.5	1.3	0.9
MEAN NUMBER OF DAYS			
Precipitation	13	16	18
Snowfall	4	10	18
Thunderstorms	*	0	0

* = less than 0.5 day

6. PARADROP WEATHER. Fair to Good. Favorable conditions occur on an average of 10-20 days per month with late night hours generally the most favorable.

7. ASTRONOMICAL DATA. Nakanno, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0524	0646	0806
Last Light	2000	1819	1654

(Prepared: 5 April 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS EASTERN SIBERIAN MOUNTAINS

DECEMBER - FEBRUARY

1. GENERAL. Winter in the Eastern Siberian Mountains of the USSR is partly cloudy and dry with bitter cold temperatures and frequent light snow flurries. Average cloud cover varies from 35 to 65 percent with the lesser amounts over the southern portions of the region. Some of the coldest temperatures in the Northern Hemisphere have been reported from this region. Mean daily minimum temperatures range from -20F to -65F. Maximums are from -10F to -40F (except in the southern sections of the region where they occasionally reach 10F by February). The coldest temperatures are typically reported over the western mountain locations and at the lower elevations, while mountain locations often report the highest mean temperatures. Snow falls on an average of 10 days per month with average monthly accumulations of only 0.5 inch. Gale force winds (28 knots or greater) are rare; winds are usually very light except over the mountains.

2. FLYING WEATHER. Fair to poor. The eastern plains and valleys of the region report ceiling/visibility less than 5000 feet and/or 6 miles 30-80 percent of the time while other portions of the region experience these conditions only 5-15 percent of the time. Ceiling/visibility less than 1500/3 occurs 5-15 percent of the time and less than 500/1, 5-10 percent. Fog and haze, most common restrictions to visibility, occur primarily during morning hours. Mountain-wave turbulence is the most probable flight hazard to be encountered during the winter and can extend to very high altitudes, especially over southern portions of the region.

3. RECONNAISSANCE WEATHER. Poor to fair. Extensive cloudiness over northern sections of the region make conditions poor at all but the early morning hours, while the southern most areas are fair to occasionally good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 8-23 days per month, depending on location.

4. TERMINAL WEATHER. Verkhoyansk, USSR. Good. Ceiling/visibility less than 300/1 occurs up to 3 percent of the time. Verkhoyansk reports about 7 days of snowfall per month, a condition which can hamper operations for brief periods.

5. EXPOSURE WEATHER. With daily temperatures of -15F to -65F, little can be added to emphasize the discomfort of winter throughout this region.

<u>VERKHUYANSK, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	32	2	18
Mean Maximum	-52	-54	-41
Mean Minimum	-56	-63	-56
Absolute Minimum	-84	-90	-94
MEAN PRECIPITATION (INCHES)	0.2	0.2	0.2
MEAN NUMBER OF DAYS			
Snowfall	8	7	6

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrops from 60 to 85 percent of the time. While frequent snow might adversely affect operations throughout the region, operations over the eastern lowland sections are more frequently hampered by morning fog and haze.

7. ASTRONOMICAL DATA. Verkhoyansk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0919	0900	0724
Last Light	1443	1531	1718

(Prepared: 27 April 1981)

MARCH - MAY

1. GENERAL. Spring in the Eastern Siberian Mountains of the USSR is a period of rapid transition from bitter cold to cool temperatures and partly cloudy to mostly cloudy skies. Mean cloud cover varies from 40 to 80 percent with peak cloudiness reported over the Stanovoy Range in the south. Mean daily minimum temperatures vary from -10F to -35F during March, but rise drastically to 15-25F over northern sections and 25-40F over southern sections by May. Precipitation falls on 6-12 days per month with only meager accumulations and, while a few locations report rain by May, snow prevails over the extreme northern locations. Thunderstorms are rare. Except over portions of the Verkhoyansk Range where they may occur on 3 days each month, gale force winds (28 knots or greater) are infrequent.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, up to 5 percent. Fog and haze are common. Mountain-wave turbulence is the most probable flight hazard and most likely to be encountered over the southern portions of the region. Aircraft icing is an occasional problem in association with the migratory storms that traverse the southern mountain regions.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur about 15 days per month during March and April but only 5-10 days during May. The best weather occurs between early evening and early morning.

4. TERMINAL WEATHER. Verkhoyansk, USSR. Good. Ceiling/visibility less than 300/1 occurs up to 3 percent of the time.

5. EXPOSURE WEATHER. Temperatures rise drastically throughout spring, but are still mostly cool even during May. Northern mountain locations of the region have equivalent chill temperatures of about -40F during March.

<u>VERKHOYANSK, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	38	52	86
Mean Maximum	-13	19	42
Mean Minimum	-39	-10	23
Absolute Minimum	-77	-66	-30
<u>MEAN PRECIPITATION (INCHES)</u>	0.1	0.2	0.3
<u>MEAN NUMBER OF DAYS</u>			
Snowfall	4	4	3

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrops 50-80 percent of the time. The worst weather occurs in the western lowlands and Verkhoyansk Range due to frequent snow flurries and occasional gusty winds.

7. ASTRONOMICAL DATA. Verkhoyansk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0534	0308	**
Last Light	1859	2108	**

** = indicates twilight lasts all night.

(Prepared: 19 April 1981)

JUNE - AUGUST

1. GENERAL. Summer is mostly cloudy and mild with frequent light rain. Mean cloudiness varies from 50 to 75 percent. Average daily minimum temperatures range from the mid 30's (F) north to the mid 50's south. Likewise, average maximum temperatures increase from the mid 60's north to near 80F south. Light rain or rain showers typically occur on 5-15 days each month with occasional snow likely at higher elevations. Thunderstorms are reported on up to 5 days per month. Gale force winds (28 knots or greater) are rare except over portions of the Verkhoyansk Range where they occur on about 3 days during June.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibility less than 6 miles occur from 10 to 25 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, up to 5 percent. The principal hazards to flight are aircraft icing and turbulence which usually occur in conjunction with afternoon thunderstorm activity over the region's river valleys. Extensive afternoon cloud cover frequently obscures mountain peaks and ridgelines.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-15 days per month. Conditions are usually best during evening hours and poorest during the afternoon over the southern mountain ranges.

4. TERMINAL WEATHER. Verkhoyansk, USSR. Good. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time. Rain showers occasionally lower ceilings and visibilities for brief periods primarily during the afternoon.

5. EXPOSURE WEATHER. Even though evenings are usually cool, mild daytime temperatures contribute to a generally comfortable season.

<u>VERKHOYANSK, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	94	98	92
Mean Maximum	60	66	58
Mean Minimum	48	47	40
Absolute Minimum	19	28	18
<u>MEAN PRECIPITATION (INCHES)</u>	0.9	1.1	1.0
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	7	8	8
Snowfall	1	*	1
Thunderstorms	2	2	1

* = less than 0.5 day

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paratroops 60-85 percent of the time. Frequent afternoon shower activity, particularly over the southern sections of the region, is the chief operational constraint. Early mornings are likely to be best for paratroops.

7. ASTRONOMICAL DATA. Verkhoyansk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	**	**	0145
Last Light	**	**	2229

** = indicates sun remains above the horizon.

(Prepared: 20 April 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a season of rapid transition as temperatures fall to well below zero. Most days are cloudy with light rain which changes to snow by November. Mean cloudiness varies from 55 to 85 percent. Average daily minimum temperatures drop from the 20's (F) and 30's during September to a range of -20F to -40F by November. Maximums range from about 45F in September to -15F to -30F by November; the northern mountain locations report the coldest temperatures during all months. Except over portions of the Verkhoyansk Range where they may occur on 5 days per month, gale force winds (28 knots or greater) are infrequent.

2. FLYING WEATHER. Fair to poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-45 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 5-10 percent. The highest frequency of these conditions occurs over the lowlands and valleys. Aircraft icing and turbulence are the most likely hazards to flight as the season progresses and migratory storms more frequently affect the climate.

3. RECONNAISSANCE WEATHER. Poor. Occasionally fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-12 days per month due to extensive cloud cover. Reconnaissance weather is usually best during late afternoon and early evening.

4. TERMINAL WEATHER. Verkhoyansk, USSR. Good. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time. Rain or snow showers occasionally lower ceilings and visibilities for brief periods, but seldom to less than 1000/3.

5. EXPOSURE WEATHER. With the approach of bitter cold temperatures and frequent snow (but slight accumulations) during October, exposure conditions become increasingly uncomfortable.

<u>VERKHOYANSK, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	77	57	34
Mean Maximum	43	12	-31
Mean Minimum	27	-3	-40
Absolute Minimum	-8	-48	-72
MEAN PRECIPITATION (INCHES)	0.5	0.3	0.3
MEAN NUMBER OF DAYS			
Precipitation	6	8	8
Snowfall	4	8	8

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops 50-80 percent of the time. Due to frequent winds in excess of 13 knots and precipitation, paratroop weather is favorable only about one-half the time over the Verkhoyansk Range and northwestern sections of the region.

7. ASTRONOMICAL DATA. Verkhoyansk, USSR. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0422	0611	0758
Last Light	1938	1731	1542

(Prepared: 11 March 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS WESTERN SIBERIAN PLAIN

DECEMBER - FEBRUARY

1. GENERAL. Winters on the Western Siberian Plain are bitterly cold and cloudy with frequent light snowfall. Daily maximum temperatures average near zero (F). Mean daily minimums range from -10F to -20F. Mean cloudiness is 60-75 percent. Snowfall is mostly light with monthly accumulations of less than 1 inch. Snow occurs on up to 20 days per month. Gale force winds (greater than 28 knots) occur on 1-3 days per month. Thunderstorms are rare.

2. FLYING WEATHER. Fair. Winter skies are overcast with clouds seldom extending above 10,000 feet. Ceiling/visibility less than 5000 feet and/or 6 miles occur 60-90 percent of the time; 1500/3, 20-50 percent of the time; and 500/1, 2-10 percent. Aircraft icing and turbulence occur frequently below 10,000 feet.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 10-15 days per month.

4. TERMINAL WEATHER. Surgut, USSR. Fair. Frequent snowfall and low temperatures make icy runway conditions likely. Ceiling/visibility less than 300/1 occurs about 5 percent of the time.

5. EXPOSURE WEATHER. The weather is bitterly cold with frequent snow. Wind chill can be very severe.

<u>SURGUT, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	34	32	36
Mean Maximum	-4	-9	+1
Mean Minimum	-15	-19	-11
Absolute Minimum	-67	-60	-56
<u>MEAN PRECIPITATION (INCHES)</u>	0.9	0.8	0.6
<u>MEAN NUMBER OF DAYS</u>			
Snowfall	16	15	12
Thunderstorms	0	0	0

6. PARADROP WEATHER. Poor. Conditions are favorable only about 40 percent of the time. Persistent cloud cover and precipitation are the most frequent causes of unfavorable weather.

7. ASTRONOMICAL DATA. Surgut, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0813	0809	0705
Last Light	1548	1623	1737

(Prepared: 11 March 1982)

MARCH - MAY

1. GENERAL. Spring is cloudy and cold with frequent precipitation. Mean cloudiness is 55-75 percent. Mean daily maximum temperatures increase from the 20's (F) during March to the 40's and 50's during May. Mean daily minimum temperatures, near zero in March, are in the 30's in May. Precipitation is light and falls on 10-15 days per month. As the season progresses there is a change of precipitation type from snow to rain, and monthly precipitation totals increase from about 0.5 inch in March to 1.5-2.0 inches in May. Gale force winds (28 knots or greater) occur on 3 days or less per month. Thunderstorms are rare in March and April, but occur on 1-3 days in May.

2. FLYING WEATHER. Fair. Persistent cloud cover is the chief obstacle to flying operations during this season. Ceiling/visibility less than 5000 feet and/or 6 miles occur 40-70 percent of the time; less than 1500/3, 10-35 percent; and less than 500/1, 1-8 percent.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Surgut, USSR. Fair. Ceiling/visibility less than 300/1 occurs about 5 percent of the time.

5. EXPOSURE WEATHER. Temperatures increase about 15 degrees per month, becoming quite mild by late May.

<u>SURGUT, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	48	70	84
Mean Maximum	15	29	43
Mean Minimum	-2	13	31
Absolute Minimum	-47	-27	-9
MEAN PRECIPITATION (INCHES)	0.7	0.8	1.7
MEAN NUMBER OF DAYS			
Precipitation	13	12	14
Snowfall	13	8	7
Thunderstorms	0	*	1

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Frequent and persistent cloud cover below 1500 feet restricts operations. Favorable conditions occur less than 40 percent of the time.

7. ASTRONOMICAL DATA. Surgut, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0547	0424	0311
Last Light	1845	1948	2054

(Prepared: 19 March 1982)

JUNE - AUGUST

1. GENERAL. Summer is generally cloudy and mild with frequent showers and thunderstorms. Mean cloudiness is 55-75 percent. Mean daily maximum temperatures are in the high 50's to mid 60's (F). Mean daily minimum temperatures range from 45F to 55F. Rain showers occur on 10-15 days each month and cause average monthly precipitation amounts of 2-3 inches. Gale force winds (28 knots or greater) occur on 1-2 days per month. Thunderstorms occur on 4-8 days per month.

2. FLYING WEATHER. Fair. Flying operations are hindered by persistent cloud cover and frequent showers and thunderstorms. Ceiling/visibility less than 5000 feet and/or 6 miles occur 40-70 percent of the time; less than 1500/3, 15-40 percent; and 500/1, 2-8 percent. Low-level turbulence is a frequent hazard during this season.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 15 days per month.

4. TERMINAL WEATHER. Surgut, USSR. Fair. The weather is cloudy with frequent showers and thunderstorms. Ceiling/visibility less than 300/1 occurs about 5 percent of the time. Runway crosswinds greater than 15 knots, with associated low-level turbulence, occur about 2 percent of the time.

5. EXPOSURE WEATHER. Temperatures are mild, but frequent showers and thunderstorms and occasional gusty winds may hinder outdoor activities.

<u>SURGUT, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	86	91	91
Mean Maximum	58	57	63
Mean Minimum	46	54	51
Absolute Minimum	22	39	28
MEAN PRECIPITATION (INCHES)	2.4	3.0	3.1
MEAN NUMBER OF DAYS			
Precipitation	14	12	15
Thunderstorms	3	5	4

6. PARADROP WEATHER. Poor. Persistent cloud cover and frequent showers and thunderstorms impact paradrop operations. Conditions are favorable less than 40 percent of the time.

7. ASTRONOMICAL DATA. Surgut, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	**	0123	0320
Last Light	**	2301	2102

** = When sunlight, twilight, or darkness exceeds 24 hours, the beginning and end of such intervals are physically uncertain.

(Prepared: 16 March 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is cloudy and cool with light, frequent precipitation. Mean cloudiness is 55-80 percent. Temperatures decrease rapidly as the season progresses. In September mean daily maximum temperatures are 50F to 60F, but by November they fall to 10-20F. Mean daily minimums are 35F to 40F in September, but -10F to +10F by November. Precipitation falls on 10-20 days per month, with mean monthly amounts of 1-2.5 inches. Gale force winds (28 knots or greater) occur on 1-3 days per month. Thunderstorms are rare.

2. FLYING WEATHER. Fair. Low clouds, within 1-2 thousand feet of the ground, are the chief obstacle to flying operations during this season. Ceiling/visibility less than 5000 feet and/or 6 miles occur 40-70 percent of the time; less than 1500/3, 10-35 percent; and less than 500/1, 2-5 percent. Icing and turbulence are frequent flying hazards at lower altitudes.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 15 days per month or less.

4. TERMINAL WEATHER. Surgut, USSR. Fair. There is persistent cloud cover with frequent precipitation. Conditions less than 300/1 occur about 5 percent of the time.

5. EXPOSURE WEATHER. Temperatures become very cold by late November, and combined with frequent precipitation and occasional strong gusty winds can impact outdoor activities.

<u>SURGUT, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	77	64	38
Mean Maximum	61	31	8
Mean Minimum	40	23	-1
Absolute Minimum	13	-20	-57
MEAN PRECIPITATION (INCHES)	2.1	1.6	1.2
MEAN NUMBER OF DAYS			
Precipitation	16	19	15
Snowfall	3	12	16
Thunderstorms	1	0	0

6. PARADROP WEATHER. Poor. Frequent cloud cover below 1500 feet and/or precipitation hinders paradrop operations. Favorable conditions occur less than 40 percent of the time.

7. ASTRONOMICAL DATA. Surgut, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0449	0602	0719
Last Light	1915	1740	1622

(Prepared: 7 February 1982)

SITUATION CLIMATIC BRIEF
UNION OF SOVIET SOCIALIST REPUBLICS
TIEN SHAN MOUNTAINS
DECEMBER - FEBRUARY

1. GENERAL. The climate is cold with cloudy skies and occasional light snow. Mean cloudiness is 40-80 percent. Mean daily maximum temperatures vary from 30F to 45F, mean minimums from 10F to 30F. Snow, usually as light flurries, occurs on 4-10 days per month, with mean monthly amounts averaging less than 2 inches. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 50-70 percent of the time; less than 1500/3, 25-50 percent; and less than 500/1, 5-15 percent. The mountainous terrain often necessitates flying at altitudes conducive to aircraft icing. Moderate to severe turbulence occasionally accompany stronger frontal and migratory storm systems.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on only 5-12 days per month. Favorable conditions occur most frequently during late evening to early morning hours.

4. TERMINAL WEATHER. Tashkent, USSR. Good. Ceiling/visibility less than 300/1 occur 3-8 percent of the time.

5. EXPOSURE WEATHER. Cold temperatures, occasional light snow, and relatively light surface winds describes the prevailing exposure weather at most locations.

<u>TASHKENT, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	75	72	79
Mean Maximum	44	40	45
Mean Minimum	28	24	28
Absolute Minimum	-22	-18	-15
MEAN PRECIPITATION (INCHES)	1.7	1.8	1.4
MEAN NUMBER OF DAYS			
Precipitation	8	3	4
Snowfall	6	2	2

6. PARADROP WEATHER. Fair. Conditions are favorable 40-70 percent of the time. Ceilings less than 1500 feet are the most common restriction.

7. ASTRONOMICAL DATA. Tashkent, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0810	0816	0750
Last Light	1826	1848	1924

(Prepared: 6 February 1982)

MARCH - MAY

1. GENERAL. Spring is partly cloudy and cool. Mean daily maximum temperatures increase steadily from about 45F to 75F, and minimums from 35F to 60F. Rain and snow occur with about equal frequency in March with rain becoming the dominant form of precipitation in April and May. Thunderstorms and gale force winds are rare.

2. FLYING WEATHER. Fair to Good. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 15 to 35 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, 1-5 percent. Migratory storms adversely influence flying operations due to icing, turbulence, and precipitation, especially during early spring.

3. RECONNAISSANCE WEATHER. Poor in early spring improving to fair late in the season. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 5-15 days per month. Persistent cloud cover is the most common hindrance to operations.

4. TERMINAL WEATHER. Tashkent, USSR. Good. Ceiling/visibility less than 300/1 occur 1-3 percent of the time. Surface winds are usually light.

5. EXPOSURE WEATHER. Subfreezing temperatures are common until the latter half of the season when temperatures begin to moderate. Precipitation is light.

<u>TASHKENT, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	91	95	108
Mean Maximum	56	69	81
Mean Minimum	37	47	56
Absolute Minimum	-4	21	32
MEAN PRECIPITATION (INCHES)	1.8	2.1	0.4
MEAN NUMBER OF DAYS			
Precipitation	5	6	4
Thunderstorms	0	1	2

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 65-90 percent of the time.

7. ASTRONOMICAL DATA. Tashkent, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0709	0616	0534
Last Light	1956	2031	2105

(Prepared: 7 February 1982)

JUNE - AUGUST

1. GENERAL. Summer weather is characterized by fair to partly cloudy skies, warm temperatures, and scant precipitation. Mean cloudiness is 30 to 60 percent, with maximum coverage during the afternoon hours. Mean maximum temperatures range from 80F to 95F, mean minimums from 55F to 70F. Precipitation occurs on 1-5 days per month, with mean monthly amounts of 1 inch or less. Thunderstorms occur on 1-2 days each month. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Good. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur only 5-20 percent of the time; less than 1500/3, 2-5 percent; and less than 500/1, less than 1 percent.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on 15-25 days per month. Cloud cover reaches peak amounts during the afternoon, making evenings and mornings best for reconnaissance operations.

4. TERMINAL WEATHER. Tashkent, USSR. Good. Ceilings less than 300 feet and/or visibilities less than 1 mile rarely occur. Surface winds are usually light.

5. EXPOSURE WEATHER. Afternoon temperatures can be uncomfortably hot. Precipitation is usually in the form of brief afternoon showers.

<u>TASHKENT, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	111	111	109
Mean Maximum	91	96	93
Mean Minimum	62	65	61
Absolute Minimum	39	46	45
MEAN PRECIPITATION (INCHES)	0.4	0.2	0.3
MEAN NUMBER OF DAYS			
Precipitation	2	1	1
Thunderstorms	2	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Good. Conditions are favorable 70-90 percent of the time.

7. ASTRONOMICAL DATA. Tashkent, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0515	0529	0601
Last Light	2131	2128	2053

(Prepared: 7 February 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is partly cloudy with warm temperatures in September turning cold by November. Mean cloudiness ranges from 30 to 60 percent with maximum cloud cover occurring in the afternoon. Mean daily maximum temperatures are in the 70's and low 80's (F) in September but by November reach only the 40's and 50's. Similarly, mean minimums are near 50 in September but fall to the mid 20's and 30's in November. Precipitation occurs mainly as rain in September and October but most often as snow in November. Precipitation is light with mean monthly amounts of 1 inch or less. Thunderstorms and gale force winds are rare.

2. FLYING WEATHER. Fair. Ceilings less than 5000 feet and/or visibilities less than 6 miles occur 20-50 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, less than 5 percent. Migratory storms that pass over the rugged terrain cause aircraft icing and moderate to severe turbulence, particularly over the mountain ridges.

3. RECONNAISSANCE WEATHER. Good to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs on 15-25 days in September, 10-20 days in Octo-

ber, but only 5-12 days in November. Late evening to midmorning hours are the most favorable for reconnaissance as this is the period of minimal cloud cover.

4. TERMINAL WEATHER. Tashkent, USSR. Good. Ceiling/visibility less than 300/1 occurs 1-3 percent of the time. Surface winds are usually light.

5. EXPOSURE WEATHER. Nighttime temperatures are below freezing at many locations during the latter half of the season.

<u>TASHKENT, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	104	100	88
Mean Maximum	83	69	56
Mean Minimum	52	43	34
Absolute Minimum	32	12	-8
MEAN PRECIPITATION (INCHES)	0.1	0.7	1.1
MEAN NUMBER OF DAYS			
Precipitation	1	4	5
Snowfall	0	0	3
Thunderstorms	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair to Poor. Conditions are favorable 65-90 percent of the time in September, but cloud cover becomes more persistent as the season progresses, so that favorable weather occurs only 40-55 percent of the time in October and 20-40 percent of the time in November.

7. ASTRONOMICAL DATA. Tashkent, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0635	0706	0741
Last Light	2001	1911	1834

(Prepared: 10 March 1982)

SITUATION CLIMATIC BRIEF
UNION OF SOVIET SOCIALIST REPUBLICS
TRANSCAUCASIA
DECEMBER - FEBRUARY

1. GENERAL. Winter throughout Transcaucasia is generally cloudy and cold with frequent, sometimes heavy, precipitation. Mean cloudiness varies between 55-80 percent. Average daily minimum temperatures range from 15F to about 35F. Maximums are usually in the 30's and 40's; however a few places at higher elevations have temperatures 10-20 degrees lower. The higher elevations experience about 5-13 days of snow and 7-18 days of rain per month with accumulations 5-10 inches at Kolikhida Lowland locations near the Black Sea. Gale force winds (28 knots or greater) occur on 5-10 days per month at a few valley locations that lie between the Great Caucasus and Little Caucasus Mountains. Precipitation is abundant; rain falls on 7-18 days per month at the Kolikhida Lowlands and snow occurs on 5-13 days at higher elevations. Blizzards occasionally cause poor weather for several hours at a time.

2. FLYING WEATHER. Poor to fair. While the lowlands have mostly fair flying conditions, the mountains are frequently obscured by low clouds and rain or snow showers. Ceiling/visibility less than 5000 feet and/or 6 miles occurs from 30-60 percent of the time; less than 1500/3, 10-40 percent; and less than 500/1, 10-20 percent. Frequent dense morning fog in the northern valleys causes visibilities there of less than 1 mile up to 40 percent of the time. As migratory storms pass through the area, aircraft icing and turbulence are especially significant flight hazards over the Great Caucasus.

3. RECONNAISSANCE WEATHER. Fair to poor. Cloud cover tends to increase throughout the day, making conditions poor for reconnaissance operations between midmorning and late afternoon. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 3-13 days per month.

4. TERMINAL WEATHER. Batumi, USSR. Fair to poor. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time. Early morning drainage winds (which attain average speeds of 15-20 knots) and frequent precipitation affect conditions.

5. EXPOSURE WEATHER. Lowland locations near the Caspian and Black Seas are cool to mild. Higher elevations are usually cold with equivalent chill temperatures near zero. Heavy precipitation in the Kolikhida Lowlands and on the southwestern slopes of the Great Caucasus can hinder outdoor activities.

<u>BATUMI, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	78	75	77
Mean Maximum	58	52	52
Mean Minimum	47	42	40
Absolute Minimum	21	18	20
MEAN PRECIPITATION (INCHES)	10.0	9.7	8.0
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	15	16	15
Snowfall	1	2	5
Thunderstorms	1	1	1
Gale Force Winds	6	4	3

6. PARADROP WEATHER. Poor. Conditions are favorable for paraproops only 30-60 percent of the time. From late afternoon to late evening is the probably the best time since, at other times, low ceiling/visibility, frequent precipitation, and strong winds are likely.

7. ASTRONOMICAL DATA. Batumi, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0701	0708	0641
Last Light	1715	1738	1815

(Prepared: 11 March 1981)

MARCH - MAY

1. GENERAL. Spring in Transcaucasia is cloudy with frequent, sometimes heavy, precipitation. With a steady rise in temperatures throughout the season, a typically cool March is replaced by mostly warm days during May. Mean cloudiness varies from 55-75 percent. Mean daily minimum temperatures range from the 30's (F) in March to 45F to 55F in May. Maximums show a similar seasonal trend from 45F to 75F. Frequent migratory storms and associated frontal systems cause 3-9 days of snowfall at higher elevations during March and 10-20 days of rain at most locations by May. Some flooding may take place in the lowlands, especially along rivers and tributaries during the spring thaw. Thunderstorms are infrequent during March, but occur an average of 5-10 days per month by May; peak activity generally affects the area bordering Turkey and Iran. Gale force winds (28 knots or greater) occur up to 10 days during March and April at valley locations, but tend to diminish with the passing of spring.

2. FLYING WEATHER. Fair. Occasionally poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-60 percent during March and 15-40 percent of the time by May; less than 1500/3, 5-25 percent; and less than 500/1, 5-15 percent. The worst flying conditions usually occur over the northern mountains where peaks and ridges are often obscured by clouds and rain or snow flurries. As migratory storms traverse the region, turbulence, heavy icing, and, by May, thunderstorms, become the most probable flight hazards. In most respects, flying conditions improve throughout the season.

3. RECONNAISSANCE WEATHER. Poor to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 3-8 days per month during the day and 8-15 days per month during evening hours. The best reconnaissance weather occurs between late afternoon and early morning over lowland locations.

4. TERMINAL WEATHER. Batumi, USSR. Fair to good. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time during the morning and less frequently at other times. Frequent rain showers, which cause lowered ceilings and visibilities, are the main weather restriction to favorable terminal weather.

5. EXPOSURE WEATHER. The frequent, sometimes heavy, precipitation excepted, comfort increases as temperatures steadily rise throughout spring.

<u>BATUMI, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	88	86	95
Mean Maximum	53	60	67
Mean Minimum	43	49	56
Absolute Minimum	21	29	39
MEAN PRECIPITATION (INCHES)	6.3	4.4	3.3
MEAN NUMBER OF DAYS			
Precipitation	15	13	12
Snowfall	2	*	0
Thunderstorms	*	1	2

* = less than 0.5 day

6. PARADROP WEATHER: Fair. Frequent precipitation and ceilings below 1500 feet make paradrop conditions favorable only 40-70 percent of the time. From late afternoon to early morning is the best time for paradrop operations.

7. ASTRONOMICAL DATA: Batumi, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0559	0506	0423
Last Light	1847	1922	1957

(Prepared: 12 March 1982)

JUNE - AUGUST

1. GENERAL. Days are partly cloudy and hot with frequent rain showers over much of Transcaucasia during the summer. A few locations above 9000 feet, however, experience cool temperatures and occasional snow throughout the summer. Mean cloudiness varies between 30-50 percent. Mean daily temperatures peak during the summer with minimums averaging 50F to and maximums 75F to 90F. Rain showers, occasionally heavy, occur on 10-20 days each month at most locations. Thunderstorms occur along the southwestern slopes of mountain ranges up to 10-15 days per month; however, in the lowlands they are less frequent. Some flooding is likely in the valleys and lowlands. Gale force winds (28 knots or greater) are rare everywhere except a couple of canyon locations between the Great Caucasus and Little Caucasus Mountains where they are reported up to 10 days per month.

2. FLYING WEATHER. Generally fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-40 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, up to 5 percent. The most frequent restrictions to flying are afternoon rain showers and thunderstorms which typically obscure the region's mountain ridges and peaks. Although aircraft icing is infrequent, turbulence below 5000 feet is common.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 7-23 days per month. The best reconnaissance weather occurs between late afternoon and early morning over extreme southern lowland locations.

4. TERMINAL WEATHER. Batumi, USSR. Fair. Ceiling/visibility less than 300/1 occurs up to 1 percent of the time. Frequent afternoon thunderstorms pose the most significant restriction to good terminal weather due to intermittently lowered ceilings and visibilities.

5. EXPOSURE WEATHER. Mostly hot and muggy days with frequent afternoon rain showers make it uncomfortable. Outdoor activities may occasionally be hampered by flooding at a few valley and lowland locations.

<u>BATUMI USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	99	95	91
Mean Maximum	75	79	79
Mean Minimum	63	67	67
Absolute Minimum	48	55	52
<u>MEAN PRECIPITATION (INCHES)</u>	6.0	6.9	9.8
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	12	14	14
Thunderstorms	6	6	8

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrop operations from 50-85 percent of the time. The best weather generally occurs over the lowlands between late evening and early morning after showers have dissipated and winds have subsided.

7. ASTRONOMICAL DATA. Batumi, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0404	0418	0451
Last Light	2023	2020	1944

(Prepared: 15 March 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in Transcaucasia is partly cloudy and warm during September but increasingly cloudy, humid, and mild by November. Precipitation is heavy throughout the season. Mean cloudiness varies from about 50 to 80 percent. Mean daily temperatures decrease steadily throughout the season; maximums range between 75F to 45F and minimums are in the 50's during September, but drop to the 30's and 40's by November. Rain falls on 10-15 days each month at most locations, gradually changing to snow during November. Thunderstorm activity tapers off from 5 days in September to only one during November. Gale force winds (28 knots or greater) are infrequent everywhere except at a couple of canyon locations between the two Caucasus ranges where they are reported on 5-10 days each month.

2. FLYING WEATHER. Fair to poor. Ceilings less than 5000 feet and/or 6 miles occurs 30-60 percent of the time; less than 1500/3, 5-20 percent; and less than 500/1, 5-10 percent (up to 20 percent at a few locations in the Great Caucasus Mountains). Conditions are poorest over the mountains where peaks and ridges are frequently obscured by clouds and showers. By late autumn, migratory storms passing across the region several times each month drastically increase the probability of encountering aircraft icing and turbulence.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-15 days during September, but only 5 days by November. By late autumn, the Lowlands are frequently obscured by dense fog while clouds form over mountainous terrain during the afternoon.

4. TERMINAL WEATHER. Batumi, USSR. Fair. Even though ceiling/visibility less than 300/1 occurs only up to 1 percent of the time, the high frequency of rain showers produces some of the heaviest accumulations of the region, causing occasional flooding.

5. EXPOSURE WEATHER. Temperatures are mild, but frequent precipitation makes overall conditions somewhat uncomfortable.

<u>BATUMI, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	91	85	86
Mean Maximum	74	69	65
Mean Minimum	62	55	52
Absolute Minimum	37	36	31
MEAN PRECIPITATION (INCHES)	12.6	11.5	11.2
MEAN NUMBER OF DAYS			
Precipitation	14	15	14
Thunderstorms	6	4	2

6. PARADROP WEATHER. Fair. Frequent precipitation and winds greater than 13 knots are the chief restrictions to operations. Conditions are favorable for paradrops 40-70 percent of the time. The Kura Lowlands report the most favorable weather for paradrops.

7. ASTRONOMICAL DATA. Batumi, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0525	0557	0632
Last Light	1852	1801	1724

(Prepared: 15 March 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS TURAN LOWLANDS

DECEMBER - FEBRUARY

1. GENERAL. Winter in much of the Turan Lowlands is partly cloudy and chilly with frequent snow flurries or rain. Mean cloudiness varies from 40 to 50 percent over the northeastern highlands to 70 percent at other locations. Mean daily maximum temperatures range from the teens to the 30's (F) across the northern desert to 40-50F at locations bordering Iran and Afghanistan. Minimums show a similar latitudinal variation, averaging -10F to 30F. Although it does rain some over the southern desert, snow is more common over the region, falling on 10-15 days per month with only meager accumulations. Gale force winds (28 knots or greater) are infrequent, but usually occur after a strong migratory storm passes over the region.

2. FLYING WEATHER. Poor to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-50 percent of the time; less than 1500/3, 10-35 percent; and less than 500/1, 5-15 percent. Low ceilings and visibilities are characteristic of locations bordering the Caspian Sea while flying weather tends to be best over northeast sections of the region. Turbulence and aircraft icing are occasionally encountered as migratory storms traverse the region.

3. RECONNAISSANCE WEATHER. Fair. Occasionally poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 8-18 days per month. The best reconnaissance weather generally occurs during late afternoon over the northern plains.

4. TERMINAL WEATHER. Ashkhabad, USSR. Poor to fair. Ceiling/visibility less than 300/1 occurs 5-15 percent of the time. Low clouds, fog, and frequent rain or snow cause the greatest problems.

5. EXPOSURE WEATHER. Uncomfortable due to the cold temperatures and frequent precipitation. Equivalent chill temperatures frequently drop to about -20F in the north during the morning.

<u>ASHKHABAD, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	88	84	91
Mean Maximum	48	44	50
Mean Minimum	31	28	32
Absolute Minimum	-9	-9	-11
MEAN PRECIPITATION (INCHES)	0.7	0.9	1.0
MEAN NUMBER OF DAYS			
Precipitation	9	9	9
Snowfall	2	3	3

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops only about 40-60 percent of the time due to frequent precipitation and low ceilings. The best paratroop weather occurs over the northern and northeastern sections of the region.

7. ASTRONOMICAL DATA. Ashkhabad, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0645	0653	0631
Last Light	1718	1739	1812

(Prepared: 16 March 1982)

MARCH - MAY

1. GENERAL. Spring in the Turan Lowlands is partly cloudy with warming temperatures and frequent, light precipitation. Mean cloudiness varies from 40 to 60 percent, peaking during the afternoon. Average daily temperatures increase throughout the season. Minimums range from 5F to 15F in the northeastern plateau in March to the 40's and 50's at all locations during May. Maximums show a comparable seasonal increase ranging from 25-60F during March to 65-85F by May. Snow falls at many locations on about 10 days during March but, by early May, rain predominates with average accumulations of 1.5 inches. Numerous locations report gale force winds (28 knots or greater) on 1-3 days each month. Average afternoon winds are 10-15 knots.

2. FLYING WEATHER. Fair to good. Ceiling/visibility improves throughout spring. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-40 percent of the time during March, but only 10-20 percent during May; less than 1500/3, 5-20 percent; and less than 500/1, up to 15 percent during March, but less than 5 percent by May. Migratory storms are accompanied by extensive cloudiness, turbulence, and aircraft icing, particularly at southern locations.

3. RECONNAISSANCE WEATHER. Fair. Occasionally poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-20 days per month during mornings and evenings, but only 5-15 days per month at other times due to greater cloudiness.

4. TERMINAL WEATHER. Ashkhabad, USSR. Fair. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time, usually during March mornings.

5. EXPOSURE WEATHER. Conditions gradually become comfortable as temperatures warm and humidity decreases.

<u>ASHKHABAD, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	100	102	115
Mean Maximum	58	72	85
Mean Minimum	40	50	61
Absolute Minimum	-6	27	39
MEAN PRECIPITATION (INCHES)	1.8	1.7	1.0
MEAN NUMBER OF DAYS			
Precipitation	11	9	6
Snowfall	2	0	0
Thunderstorms	1	3	4

6. PARADROP WEATHER. Fair to good. Conditions are favorable for paradrrops about 55-80 percent of the time. The high frequency of ceilings below 1500 feet and gusty winds during the afternoon adversely affect parDROP operations.

7. ASTRONOMICAL DATA. Ashkhabad, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0553	0505	0428
Last Light	1839	1909	1939

(Prepared: 18 March 1982)

JUNE - AUGUST

1. GENERAL. Summer in the Turan Lowlands is partly cloudy, hot, and dry. Mean cloud cover varies from 15 percent across the Karakum Desert in the south to 60 percent over northern sections. Mean daily minimum temperatures range from about 50F to 70F. Maximums are mostly in the 80's and 90's. However, daytime temperatures can exceed 100F in the deserts bordering Iran and Afghanistan. Rain is infrequent over the southern deserts where rainfall seldom exceeds 0.5 inch per month; to the north, 1-10 days of rain per month is typical. The northern plains and eastern mountain ranges have an average of 5-10 thunderstorm days per month, but thunderstorms are rare elsewhere. At many locations, winds are calm during the morning, but reach speeds of 10-12 knots by midafternoon. Gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Generally good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-30 percent of the time at northeastern plateau locations, but only 5-15 percent at desert locations; less than 1500/3, up to 8 percent; and less than 500/1, 3-5 percent. Northern sections of the region have frequent thunderstorms. Low-level turbulence is common nearly everywhere during the afternoon.

3. RECONNAISSANCE WEATHER. Fair to good. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-25 days a month. Best reconnaissance conditions occur over the southern deserts between late afternoon and midmorning when skies are virtually clear.

4. TERMINAL WEATHER. Ashkhabad, USSR. Good. Ceiling/visibility less than 300/1 occurs up to 2 percent of the time. Haze and dust restrict visibility to 3-6 miles up to 60 percent of the time during the morning, but this condition seldom persists beyond midday.

5. EXPOSURE WEATHER. Days are usually hot and dry in the southern deserts. Frequent rain showers over the northern plains make conditions muggy and oppressive there.

<u>ASHKHABAD, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	115	117	115
Mean Maximum	95	100	98
Mean Minimum	69	73	69
Absolute Minimum	46	55	52
MEAN PRECIPITATION (INCHES)	0.3	0.2	0.1
MEAN NUMBER OF DAYS			
Precipitation	2	1	1
Thunderstorms	2	1	1

6. PARADROP WEATHER. Good. Conditions are favorable for paradrops 70-95 percent of the time. The best weather occurs between late afternoon and midmorning when winds are light and low ceilings least likely.

7. ASTRONOMICAL DATA. Ashkhabad, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0412	0425	0453
Last Light	2002	2000	1929

(Prepared: 17 March 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn in the Turan Lowlands is a season of transition from the partly cloudy, dry, and warm to hot days of September to the cloudy and cool days of November. Cloud cover steadily increases from averages of 25-50 percent during September to 45-70 percent by November. Mean daily minimum temperatures show a gradual decrease through the season from the 40's (F) of September to the teens and 20's of November. Maximums range from 65F to 80F during September to 35F to 60F in November. Although rain falls on about 5 days per month during September, snow predominates by November, occurring on 5-15 days. Thunderstorm activity is rare. Gale force winds (28 knots or greater) occur on 1-3 days per month at peninsular locations bordering the eastern Caspian Sea. By October, migratory storms bring increasing cloudiness and precipitation to western and northern locations.

2. FLYING WEATHER. Good to fair. Good during September, but only fair by November due to low ceilings and fog. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 5-15 percent of the time in September, but increases to 15-40 percent of the time during November as frontal-type weather becomes more frequent; less than 1500/3, about 5 percent during September and up to 20 percent by November; and less than 500/1, up to 3 percent in September, but increasing to 5-15 percent during November. Factors most likely to adversely affect flying conditions include frontal-associated turbulence, precipitation, and aircraft icing, all of which are most likely to be encountered toward late autumn over northwestern sections of the region.

3. RECONNAISSANCE WEATHER. Good to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-25 days per month. As cloudiness increases through the season, conditions become less favorable for reconnaissance operations.

4. TERMINAL WEATHER. Ashkhabad, USSR. Fair. Ceiling/visibility less than 300/1 occurs 3-6 percent of the time during September, but increases to as much as 10 percent by November due to the greater likelihood of morning fog and haze.

5. EXPOSURE WEATHER. Even though extremes of temperature do occur, the season is generally comfortable with mild, dry days and cool nights.

<u>ASHKHABAD, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	111	104	91
Mean Maximum	89	74	58
Mean Minimum	60	49	38
Absolute Minimum	37	23	5
MEAN PRECIPITATION (INCHES)	0.1	0.5	0.7
MEAN NUMBER OF DAYS			
Precipitation	1	4	6
Snowfall	0	*	1
Thunderstorms	1	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Occasionally good. Conditions are favorable for paratroop from 55-85 percent. The best weather usually occurs late in the afternoon during September when low ceilings and strong winds are minimal.

7. ASTRONOMICAL DATA. Ashkhabad, USSR. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

SEP

OCT

NOV

First Light

0521

0548

0618

Last Light

1842

1757

1724

(Prepared: 14 April 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS NORTHWESTERN USSR

DECEMBER - FEBRUARY

1. GENERAL. Winters are cold and cloudy with frequent snowfall. Mean daily maximum temperatures are in the upper teens (F). Mean minimum temperatures range from -10F to +15F. Cloudiness is extensive, averaging 70-90 percent. Mean relative humidity is high, about 85-95 percent. It snows on 10-15 days per month. Monthly snowfall is 1-2 inches at most locations. Thunderstorms and gale force winds (28 knots or greater) are rare. The sun remains below the horizon until January 17.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-70 percent of the time; less than 1500/3, 25-40 percent; and less than 500/1, 10-25 percent of the time. Severe turbulence and icing are probable with the primary low-pressure systems that move through this region from the northwest. The icing is most likely at lower altitudes.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Murmansk, USSR. Poor. The weather at Murmansk is cold and cloudy with frequent snow. Ceiling/visibility less than 300/1 occurs 8-15 percent of the time.

5. EXPOSURE WEATHER. The cold temperatures, high humidity, and frequent snow can be quite taxing on both personnel and equipment. Most of the area has a continuous snow cover from mid-November through mid-April.

<u>MURMANSK, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	39	43	41
Mean Maximum	20	16	15
Mean Minimum	12	8	6
Absolute Minimum	-22	-29	-36
MEAN PRECIPITATION (INCHES)	1.6	1.4	0.8
MEAN NUMBER OF DAYS			
Snowfall	15	15	12
Thunderstorms	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Poor. Conditions are favorable for paradrop operations on only 5-10 days per month.

7. ASTRONOMICAL DATA. Murmansk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	**	**	0624
Last Light	**	**	1342

** = sun remains below the horizon.

(Prepared: 19 April 1982)

MARCH - MAY

1. GENERAL. Spring is cloudy and cool with frequent light precipitation. Mean cloudiness is 60-80 percent. Mean daily maximum temperatures increase from 15-30F in March to 30-50F during May. Mean daily minimum temperatures are -5F to +10F in March and 20-35F in May. Precipitation, usually light, occurs on 10-15 days per month. Monthly precipitation totals are 0.5-1.5 inches. Thunderstorms and gale force winds (23 knots or greater) are rare.

2. FLYING WEATHER. Poor. There is a high incidence of low cloudiness and visibility. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-60 percent of the time; less than 1500/3, 15-30 percent; and less than 500/1, 10 percent or less. Precipitation, though usually light, occurs frequently. Turbulent conditions are often found within the migratory lows which traverse the area. Temperatures are within the range conducive to severe clear icing at the lower levels.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month in most areas.

4. TERMINAL WEATHER. Murmansk, USSR. Poor. Icy runway conditions are likely through the middle of May. Visibility is often restricted by snowfall. Severe icing is often encountered on takeoff and descent. Ceiling/visibility less than 300/1 occurs 5-10 percent of the time.

5. EXPOSURE WEATHER. Although a gradual warming trend occurs as the season progresses, nighttime temperatures still fall to near freezing during May. Although gale force winds (26 knots or greater) are rare, winds of 17 knots or greater occur approximately 20 percent of the time. Severe wind chill conditions occur, even in May.

<u>MURMANSK, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	43	61	77
Mean Maximum	24	35	45
Mean Minimum	13	24	34
Absolute Minimum	-26	0	16
MEAN PRECIPITATION (INCHES)	0.8	0.8	1.3
MEAN NUMBER OF DAYS			
Precipitation	13	12	10
Thunderstorms	*	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable 45-70 percent of the time. The afternoon hours are the least favorable.

7. ASTRONOMICAL DATA. Murmansk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0413	0146	0135
Last Light	1544	1753	2108

(Prepared: 19 April 1982)

JUNE - AUGUST

1. GENERAL. Summer is mostly cloudy and mild with frequent light precipitation. Mean cloudiness is 60-75 percent. Mean daily maximum temperatures are 55-65F. Mean daily minimums are 35-45F. Precipitation, usually light, occurs on 10-15 days each month. Monthly precipitation totals are 2-3 inches. Two or three thunderstorms per month can be expected. Gale force winds (28 knots or greater) occur on 1-2 days each month.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 50-70 percent of the time; less than 1500/3, 20-35 percent; and less than 500/1; occurs 5-10 percent. Turbulence and icing are frequently encountered at the lower flight levels.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 10 days per month.

4. TERMINAL WEATHER. Murmansk, USSR. Fair. The combination of persistent cloud cover, precipitation, and restricted visibility make flying conditions only fair. Ceiling/visibility less than 300/1 occurs about 5 percent of the time.

5. EXPOSURE WEATHER. Because of the high humidity, equipment and supplies need to be protected from rust, corrosion, and mildew.

<u>MURMANSK, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	82	90	88
Mean Maximum	56	62	58
Mean Minimum	43	49	47
Absolute Minimum	28	37	36
MEAN PRECIPITATION (INCHES)	2.3	2.2	2.8
MEAN NUMBER OF DAYS			
Precipitation	12	12	14
Thunderstorms	3	3	2

6. PARADROP WEATHER. Poor. Conditions are favorable for paratroops less than 40 percent of the time. Afternoon is the worst time.

7. ASTRONOMICAL DATA. Murmansk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	**	**	0041
Last Light	**	**	1859

** = sun is above the horizon.

(Prepared: 19 April 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is cloudy and cool with frequent precipitation. Mean cloudiness is 70-90 percent. Mean daily maximum temperatures are in the 40's (F) during September, but by November reach only the 20's. Mean daily minimum temperatures are in the 30's in September, the teens in November. Mean monthly

precipitation totals are 1-3 inches. Precipitation falls on 12-16 days per month. Thunderstorms and gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 55-70 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1, 5-15 percent of the time. Low-level icing and turbulence are common hazards during this season.

3. RECONNAISSANCE WEATHER. Poor. Total sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Murmansk, USSR. Fair. Ceilings and visibilities at Murmansk are frequently low, and precipitation occurs often. Turbulence and icing are frequently encountered on takeoff and/or descent. Ceiling/visibility less than 300/1 occurs 5-10 percent of the time.

5. EXPOSURE WEATHER. Temperatures decrease about 10 degrees per month, becoming cold by November. Precipitation occurs frequently throughout the season.

<u>MARMANSK, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	68	54	48
Mean Maximum	48	36	28
Mean Minimum	40	30	23
Absolute Minimum	25	-6	-13
MEAN PRECIPITATION (INCHES)	2.1	2.2	1.5
MEAN NUMBER OF DAYS			
Precipitation	14	15	13
Snowfall	3	11	13
Thunderstorms	0	0	0

6. PARADROP WEATHER. Generally poor. The frequency of favorable weather ranges from a high of nearly 65 percent during late evening hours in September to a low of 30-35 percent during November afternoons.

7. ASTRONOMICAL DATA. Murmansk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0258	0459	0734
Last Light	1626	1407	1130

(Prepared: 26 March 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST RERPUBLICS SOUTHEASTERN USSR

DECEMBER - FEBRUARY

1. GENERAL. Winter in the Southeastern USSR is partly cloudy and very cold with frequent precipitation. Mean cloudiness varies from 25-50 percent at all locations except the Kuril Islands where skies are frequently overcast. Average daily minimum temperatures range from about -20F to zero (F) at mainland locations to zero to 20F in the Kuril Islands. Mean maximums seldom rise above 5F at inland locations, but commonly reach 25F in the islands. It snows on up to 20-25 days per month at mainland locations and higher elevations, but it rains occasionally in the Kuril Islands. Gale force winds (28 knots or greater) can occur up to 15 days per month in the Kuril Islands and 3 days elsewhere. Blowing snow is common.

2. FLYING WEATHER. Fair. Occasionally poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 10-30 percent of the time at most locations, but up to 60 percent over the Kuril Islands; less than 1500/3, 5-20 percent; and less than 500/1, 3-15 percent. Migratory storms bring turbulence and aircraft icing along with frequent precipitation. These hazards are especially likely over the Kuril Islands along with low-level wind shear and turbulence.

3. RECONNAISSANCE WEATHER. Poor over the Kuril Islands. Fair to good elsewhere. Sky cover of 2/8 or less and visibility of 3 miles or greater occur 10-23 days at all locations except the Kuril Islands where weather is favorable 5-8 days per month. Normally, late afternoon to early morning is the best time.

4. TERMINAL WEATHER. Poronaysk, USSR. Good to fair. Ceiling/visibility less than 300/1 occurs about 5 percent of the time. Frequent snowfall makes terminal conditions less than ideal, but monthly precipitation accumulations are seldom greater than 1 inch.

5. EXPOSURE WEATHER. Bitter cold, strong winds, and frequent snowfall severely restrict outdoor activities. The Kuril Islands chain experiences slightly warmer temperatures than the region as a whole due to the moderating effect of the Sea of Okhotsk.

PORONAYSK, USSR	DEC	JAN	FEB
TEMPERATURE (F)			
Absolute Maximum	46	43	41
Mean Maximum	16	9	16
Mean Minimum	-1	-9	-5
Absolute Minimum	-31	-44	-38
MEAN PRECIPITATION (INCHES)	1.1	1.0	0.7
MEAN NUMBER OF DAYS			
Snowfall	14	12	12

6. PARADROP WEATHER. Poor. Gusty winds, low ceilings, and frequent snowfall are the most common restrictions to paradrop operations. Conditions are favorable for paradrops only 30-50 percent of the time.

7. ASTRONOMICAL DATA. Poronaysk, USSR. (Date as of the 15th/local standard time)

CIVIL TWILIGHT	DEC	JAN	FEB
First Light	0841	0844	0806
Last Light	1805	1831	1919

(Prepared: 29 March 1982)

MARCH - MAY

1. GENERAL. Spring over the Southeastern USSR transitions from partly cloudy skies and very cold temperatures in March to mostly cloudy skies and mild temperatures by May. Mean cloudiness varies from 35-75 percent. Average daily temperatures rise steadily through the season; minimums are in the teens (F) during March, but increase to the 30's and 40's by May, and maximums increase from the 30's of March to 50-65F during May. While snow falls on about 20 days in March, rain gradually predominates by May, occurring on 10-15 days at most locations. Thunderstorms rarely occur until May when 1-3 thunderstorm days per month is about average. Winds gradually decrease in intensity throughout the season; gale force winds (28 knots or greater) occur on up to 14 days during March, but only 7 days during May.

2. FLYING WEATHER. Fair to poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 20-60 percent of the time, the higher frequencies being in the Kuril Islands; less than 1500/3, 10-30 percent; and less than 500/1, 5-10 percent (except in the Kuril Islands where such conditions occur up to 25 percent of the time). Aircraft icing is most probable during March; turbulence and wind shear are flying hazards throughout spring.

3. RECONNAISSANCE WEATHER. Fair to poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days per month during March, but only 5-10 days in May, a transition that corresponds with the seasonal increase in cloudiness.

4. TERMINAL WEATHER. Poronaysk, USSR. Fair. Occasionally poor. Ceiling/visibility less than 300/1 occurs 8-18 percent of the time with the highest frequency of occurrence during May and in the early morning. Terminal operations may occasionally be hampered by the frequent precipitation of spring.

5. EXPOSURE WEATHER. The uncomfortable conditions of March are gradually replaced by mild temperatures and light winds in May.

<u>PORONAYSK, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	48	66	91
Mean Maximum	26	38	46
Mean Minimum	7	24	33
Absolute Minimum	-29	-11	19
MEAN PRECIPITATION (INCHES)	1.1	1.7	2.8
MEAN NUMBER OF DAYS			
Precipitation	14	14	13
Snowfall	14	14	6

6. PARADROP WEATHER. Poor to fair. Conditions are favorable for paratroops 30-70 percent of the time. While frequent precipitation adversely affects operations during all months, gusty surface winds and low ceilings are the main weather factors influencing paratroops during March. The best paratroop weather normally occurs between late afternoon and early morning.

7. ASTRONOMICAL DATA. Poronaysk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0711	0558	0504
Last Light	2004	2055	2146

(Prepared: 29 March 1982)

JUNE - AUGUST

1. GENERAL. Summer is cloudy with mild to warm daytime temperatures and frequent precipitation in the Southeastern Coast and Islands. Mean cloudiness varies from 60-85 percent. Mean daily minimum temperatures are 40F to 60F. Maximums are 55F to 80F. Rain, drizzle, or rain showers occur on 10-15 days per month with average monthly accumulations of 2-3 inches. The southwest portion of the region reports up to 7 thunderstorm days per month while other locations average only 1-3 such days. Even though summer brings light winds to much of the mainland, the Kuril Islands and Sakhalin experience gale force winds (28 knots or greater) up to 4 days per month.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 15-30 percent of the time over mainland river valleys, but 50-85 percent in the Kuril Islands and Sakhalin; less than 1500/3, 15-70 percent; and less than 500/1, 15-50 percent. Generally, the poorest flying conditions are to be found at island locations due to the very high frequency of low clouds, sea fog, and frequent rain or drizzle. Best flying conditions occur over the mainland lowlands. Turbulence and wind shear are occasional flight hazards throughout the region.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on only 3-10 days per month due to extensive afternoon cloudiness. Reconnaissance weather is usually the most favorable between late afternoon and early morning.

4. TERMINAL WEATHER. Poronaysk, USSR. Poor. Ceiling/visibility less than 300/1 occurs 15-25 percent of the time. Among the most common restrictions to favorable terminal weather are early morning fog, (up to 8 days per month) and frequent rain.

5. EXPOSURE WEATHER. Aside from the frequent rain, most locations offer comfortable conditions due to mild daytime temperatures and generally light winds.

<u>PORONAYSK, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	91	97	97
Mean Maximum	54	62	67
Mean Minimum	42	51	54
Absolute Minimum	28	32	37
<u>MEAN PRECIPITATION (INCHES)</u>	2.8	3.5	4.4
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	14	16	15
Thunderstorms	1	1	*

* = less than 0.5 day

6. PARADROP WEATHER. Poor to fair. Conditions are favorable for paradrops 30-75 percent of the time, depending on location. Mainland river valleys have the best weather. Islands have the worst weather due to low cloud ceilings, frequent rain and drizzle, and afternoon winds in excess of 13 knots.

7. ASTRONOMICAL DATA. Poronaysk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0434	0453	0541
Last Light	2223	2214	2123

(Prepared: 30 March 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. For most locations, autumn is a transition season when temperatures are mild during September turning cold by November, and rain gradually changes to snow under mostly cloudy skies. Mean cloudiness varies from 40-75 percent with the greatest coverage over the Kuril Islands. Mean daily temperatures drop steadily; minimums decrease from the 40's (F) during September to -5F to 30F in November, and maximums drop from the 50's and 60's of September to 20-40F by November. The highest temperatures are generally reported in the islands where the Sea of Okhotsk has a decided moderating influence. It rains on about 15 days during September. By November snow predominates, occurring up to 20 days each month. Gale force winds (28 knots or greater) gradually increase in frequency during autumn and many of the Kuril Islands report about 5 such days per month.

2. FLYING WEATHER. Fair to poor. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 25-60 percent of the time; less than 1500/3, 10-25 percent; and less than 500/1, 5-15 percent. Most of the Kuril Islands experience an increase in low ceilings and visibilities through the season, while interior and mainland locations have improving conditions from September to November. By late autumn, there is a distinct increase in the number of migratory storms passing through the region, bringing an increased potential for aircraft icing, turbulence, and showers. Especially over Sakhalin and the islands, low-level wind shear is highly probable.

3. RECONNAISSANCE WEATHER. Fair to poor. The high frequency of low clouds and sea fog make conditions poor over Sakhalin and the Kuril Islands. Fair weather generally prevails over mainland river valleys. Sky cover of 2/8 or less and visibility of 3 miles or greater occur an average of 6-18 days per month, depending on location.

4. TERMINAL WEATHER. Poronaysk, USSR. Fair. Ceiling/visibility less than 300/1 occurs 3-10 percent of the time with highest frequencies during the morning. By November, conditions begin to deteriorate as snow becomes frequent and surface winds occasionally reach gale force.

5. EXPOSURE WEATHER. Autumn is ushered in by mild weather but, by November, cold temperatures, frequent precipitation, and strong winds may restrict outdoor activities.

<u>PORONAYSK, USSR</u>	<u>SEP.</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	84	70	59
Mean Maximum	61	49	31
Mean Minimum	46	33	15
Absolute Minimum	27	9	-22
MEAN PRECIPITATION (INCHES)	4.8	3.0	2.5
MEAN NUMBER OF DAYS			
Precipitation	15	12	14
Snowfall	*	4	14

* = less than 0.5 day

6. PARADROP WEATHER. Poor to fair. Conditions are favorable for paratroops about 30-75 percent of the time with best conditions occurring over the mainland. Most islands experience strong winds, frequent rain or snow, and low ceilings during the morning.

7. ASTRONOMICAL DATA. Poronaysk, USSR. (Date as of the 15th/local standard time)

CIVIL TWILIGHT

SEP

OCT

NOV

First Light
Last Light

0630
2015

0716
1910

0804
1820

(Prepared: 17 March 1982)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS
SOUTHWESTERN USSR

DECEMBER - FEBRUARY

1. GENERAL. Winter brings cloudy skies, very cold temperatures, and frequent snowfall to the Southwestern Region. Mean cloudiness varies from 65 to 90 percent. Average daily minimum temperatures range from near zero (F) at northeastern upland locations to 30F at locations bordering the Black Sea. Mean maximums vary from about 15F to 35F; the highest temperatures occur along the Black Sea. Precipitation, usually light snow, falls on about 15 days each month with average accumulations of 1-3 inches per month. Thunderstorms are rare. Surface winds are frequently light during the morning and attain speeds of 7-16 knots during the afternoon; gale force winds (28 knots or greater) occur up to 3 days a month at a few east central locations. Frequent, dense fog is a common phenomenon over much of the western half of the Southwestern Region.

2. FLYING WEATHER. Poor to fair. Ceiling/visibility less than 5000 feet and/or 6 miles occurs from 40 to 70 percent of the time; less than 1500/3, 20-60 percent; and less than 500/1, 10-35 percent. Flying conditions tend to be poorest at locations near rivers and throughout the western half of the region where low clouds and fog can persist for 2-3 days each time. Turbulence and aircraft icing occur throughout the season.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 3-10 days per month. Conditions are equally poor at nearly all locations during the morning, but some improvement can be expected by late afternoon at northwestern locations.

4. TERMINAL WEATHER. Odessa, USSR. Poor. Ceiling/visibility less than 300/1 occurs about 20 percent of the time. Terminal weather is least favorable during morning hours due to the frequent occurrence of fog.

5. EXPOSURE WEATHER. Chill temperatures as low as zero (F) and the occasional intrusions of cold, humid air from the Baltic Sea make this a very uncomfortable area.

<u>ODESSA, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	58	54	59
Mean Maximum	33	29	33
Mean Minimum	27	22	26
Absolute Minimum	-5	-11	-14
MEAN PRECIPITATION (INCHES)	1.5	1.1	1.0
MEAN NUMBER OF DAYS			
Precipitation	13	14	12
Snowfall	9	13	12

6. PARADROP WEATHER. Fair to poor. Frequent precipitation and low ceiling/visibility make paradrop conditions favorable only 30-60 percent of the time. Extreme eastern locations generally experience the best paradrop weather between late afternoon and early morning hours.

7. ASTRONOMICAL DATA. Odessa, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0634	0639	0607
Last Light	1624	1648	1730

MARCH - MAY

1. GENERAL. Spring in the Southwestern Region is a transition season in which skies are cloudy in March but partly cloudy by May and temperatures become increasingly mild in contrast to the cold of winter. Mean cloudiness decreases from about 70 percent in March to 55 percent in May. Mean daily minimum temperatures gradually rise from the 20's and 30's (F) of March to the 50's of May. Mean maximums vary from 35F in March to about 70F during May. Precipitation is frequent, falling on 8-15 days per month. It changes from snow in March to rain during April and May. Gale force winds (28 knots or greater) occur up to 3 days per month at a few locations while speeds of 7-16 knots are the rule at most locations during the afternoon. Dense fog occurs during the morning on about 15 days per month, but diminishes in frequency after mid-April. By May, thunderstorms occur on 3-7 days per month.

2. FLYING WEATHER. Poor to good. Ceiling/visibility less than 5000 feet and/or 6 miles improves from 40-60 percent in March to 15-30 percent of the time in May; less than 1500/3, 15-40 percent; and less than 500/1, 10-35 percent during March, but 5-15 percent by May. Poorest conditions occur over western sections and near river valleys where low clouds and fog are common on most March mornings with conditions gradually improving throughout the day. By May, flying weather is usually good with best conditions found over the Volga Uplands. Turbulence and aircraft icing are occasional flight hazards during March, especially in association with the weak migratory storms that traverse the region.

3. RECONNAISSANCE WEATHER. Poor to fair. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 5-12 days per month. Reconnaissance conditions generally improve throughout the season and from west to east. Operations are least restricted between late evening and early morning.

4. TERMINAL WEATHER. Odessa, USSR. Poor to fair. Ceiling/visibility less than 300/1 occurs about 15 percent of the time during March, but 5 percent by May. Dense morning fog makes takeoff/landing conditions poor, especially during March, but they improve throughout the season.

5. EXPOSURE WEATHER. Chilly during March, but mostly mild weather prevails by May.

<u>ODESSA, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	70	75	91
Mean Maximum	39	52	67
Mean Minimum	32	41	54
Absolute Minimum	5	21	34
<u>MEAN PRECIPITATION (INCHES)</u>	0.7	1.1	1.3
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	9	8	8
Snowfall	7	1	0
Thunderstorms	1	2	3

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops 40-70 percent of the time. Among the most frequent restrictions to operations are frequent low ceiling/visibility, precipitation, and occasional strong afternoon winds. Eastern portions of the region tend to experience the best paratroop weather, especially between late afternoon and early morning.

7. ASTRONOMICAL DATA. Odessa, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0518	0418	0328
Last Light	1809	1852	1934

(Prepared: 17 March 1982)

JUNE - AUGUST

1. GENERAL. Summer in the Southwestern Region is partly cloudy and warm with somewhat frequent, but light, precipitation. Mean cloudiness decreases from 40-55 percent during June to 30-55 percent in August. Temperatures peak during July with mean maximums in the 70's and 80's (F) and mean daily minimums between 50F and 65F. Western sections of the region have the highest frequency of precipitation with rain showers on 10-15 days each month. Thunderstorms occur in much of the region on 5-10 days each month with peak frequency during July at western sections of the region. Surface winds average about 7-13 knots; gale force winds (28 knots or greater) are rare.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs from 10 to 25 percent of the time; less than 1500/3, 5-15 percent; and less than 500/1, up to 6 percent at western locations during the early morning, but less than 2 percent at other locations and at other times. The chief flying hazards are afternoon thunderstorms and their associated icing and turbulence. The most favorable conditions normally occur over the Volga Uplands where low ceiling/visibility and thunderstorms are infrequent.

3. RECONNAISSANCE WEATHER. Fair. Occasionally poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-20 days per month during morning hours, but only 5-15 days during the afternoon. The eastern sections of the region have the least cloud cover.

4. TERMINAL WEATHER. Odessa, USSR. Good to fair. Ceiling/visibility less than 300/1 occurs up to 5 percent of the time during the morning, but only rarely after midday. Fog reduces visibility to less than 3 miles about 10 percent of the time during early morning hours. Occasional afternoon thunderstorms or rain showers briefly lower terminal conditions.

5. EXPOSURE WEATHER. Quite comfortable due to the moderating influence of the Black Sea.

<u>ODESSA, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	92	95	94
Mean Maximum	74	79	79
Mean Minimum	62	66	63
Absolute Minimum	42	50	47
<u>MEAN PRECIPITATION (INCHES)</u>	1.9	1.6	1.2
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	6	7	5
Thunderstorms	6	7	5

6. PARADROP WEATHER. Good. Favorable paradrop conditions occur 60-85 percent of the time. Eastern sections of the region have the best paradrop weather, especially between late afternoon and early morning hours when winds have diminished.

7. ASTRONOMICAL DATA. Odessa, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0304	0320	0400
Last Light	2005	1959	1916

(Prepared: 17 March 1981)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn is a transition season for much of the Southwestern Region in which skies become mostly cloudy by October, temperatures are mild during September but cold by November, and precipitation becomes increasingly frequent throughout the season. Mean cloudiness ranges from about 45 percent in September to 75 percent by November. Temperatures steadily decrease from September to November; mean daily minimums drop from the 50's to the 30's (F) and maximums decrease from about 70F to the 40's. Precipitation is frequent throughout the season, falling on 5-15 days per month. Light rain is likely in September, but snow predominates everywhere except near the Black Sea by November. Thunderstorms occur on 3 days in September, but almost none during November. Surface winds average 7-16 knots; gale force winds (28 knots or greater) are quite rare.

2. FLYING WEATHER. Good to poor. Flying weather steadily deteriorates through the season as morning fog and low clouds become common restrictions to operations by late October. Ceiling/visibility less than 5000 feet and/or 6 miles increases in frequency from 15-30 percent of the time in September to 50-70 percent during November; less than 1500/3, 5-15 percent in September and 20-50 percent during November; and less than 500/1, 5-10 percent. Turbulence and aircraft icing become significant flight hazards by late October as migratory lows and frontal systems begin their frequent trek across the region.

3. RECONNAISSANCE WEATHER. Fair to poor. Cloudiness steadily increases throughout the season making conditions generally poor by November. Sky cover of 2/8 or less and visibility of 3 miles or greater occur on 10-15 days during September, but only 5 days in November.

4. TERMINAL WEATHER. Odessa, USSR. Fair to poor. The frequency of ceiling/visibility less than 300/1 increases from about 3 percent in September to 10-20 percent by November. Dense fog during the morning is largely responsible for the poor terminal weather of October and November.

5. EXPOSURE WEATHER. Comfortable during September, but chilly by November. Although light, the frequent precipitation may hamper certain outdoor activities.

<u>ODESSA, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	90	86	76
Mean Maximum	68	58	42
Mean Minimum	56	48	34
Absolute Minimum	32	8	6
<u>MEAN PRECIPITATION (INCHES)</u>	1.0	1.1	1.5
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	5	4	9
Snowfall	0	0	2
Thunderstorms	3	*	*

* = less than 0.5 day

6. PARADROP WEATHER. Fair. Conditions are favorable for paratroops 40-70 percent of the time. The prime restrictions to operations include low ceiling/visibility, somewhat frequent rain or snow, and occasional gusty afternoon winds. Eastern sections of the region have the best paratroop weather.

7. ASTRONOMICAL DATA. Odessa, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0441	0520	0601
Last Light	1816	1719	1635

(Prepared: 10 December 1980)

SITUATION CLIMATIC BRIEF

UNION OF SOVIET SOCIALIST REPUBLICS
WESTERN USSR*

DECEMBER - FEBRUARY

1. GENERAL. Winters are bitterly cold and cloudy with frequent snowfall. Mean maximum temperatures are only in the teens with mean minimum temperatures near zero. Mean cloudiness is 70-90 percent.

2. FLYING WEATHER. Poor. Ceiling/visibility less than 5000 feet and/or 6 miles occur up to 80 percent of the time; less than 1500/3, up to 50 percent; and less than 500/1, up to 35 percent.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur less than 10 days per month. The early morning hours are the most favorable.

4. TERMINAL WEATHER. Moscow, USSR. Poor. Ceilings/visibilities less than 300/1 occur up to 35 percent of the time.

5. EXPOSURE WEATHER. Bitterly cold with frequent snowfall. Temperatures of -20F are quite common, and absolute minimum temperatures of -40F have been observed in all but the northwestern portions of the area.

<u>MOSCOW, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURES (F)			
Absolute Maximum	46	43	43
Mean Maximum	19	15	19
Mean Minimum	12	6	8
Absolute Minimum	-40	-43	-40
MEAN PRECIPITATION (INCHES)	1.7	1.6	1.4
MEAN NUMBER OF DAYS			
Precipitation	22	20	16
Snowfall	18	18	15
Thunderstorms	0	0	0

6. PARADROP WEATHER. Poor. Favorable conditions occur only 20-40 percent of the time. The early morning hours are the most favorable.

7. ASTRONOMICAL DATA. Moscow, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0852	0850	0755
Last Light	1556	1628	1733

* Area Bounded by Western USSR Borders, the Ural Mountains, and Latitudes 50-60°N.

(Prepared: 3 April 1981)

MARCH - MAY

1. GENERAL. The transitional season of spring brings rapid temperature changes. Mean daily temperatures increase from the high 20's (F) to low 30's in March to the low 60's in May. Mean cloudiness decreases from approximately 75 percent in March to approximately 50 percent in May. Mean monthly precipitation totals 1.4 inches in March to 2.0 inches in May. Thunderstorms are rare in March, but increase in frequency during the remainder of the season. Gale force winds are rare.

2. FLYING WEATHER. Poor during the first half of the season. Fair to good by late in the season. Ceiling/visibility less than 5000 feet and/or 6 miles occurs approximately 35-60 percent of the time; less than 1500/3, 20-50 percent in March and April, 20 percent or less during May; less than 500/1, 10-15 percent in March, less than 10 percent during April and May.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs 15 percent of the time or less at most locations during this season.

4. TERMINAL WEATHER. Moscow, USSR. Poor in March and April, fair during May. Ceiling/visibility less than 300/1 can occur as often as 10 percent of the time in March and April, but less than 3 percent of the time in May. Thunderstorms are frequent in both April and May.

5. EXPOSURE WEATHER. The thawing of extensive snow cover in early spring turns many areas with poor drainage into seas of mud, making movement of personnel and equipment extremely difficult. Temperatures are cold in March, cool in April, but pleasant during May.

<u>MOSCOW, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	52	73	88
Mean Maximum	32	50	66
Mean Minimum	21	35	48
Absolute Minimum	-9	7	27
MEAN PRECIPITATION (INCHES)	1.4	1.5	2.0
MEAN NUMBER OF DAYS			
Precipitation	13	8	9
Snowfall	13	6	1
Thunderstorms	1	4	6

6. PARADROP WEATHER. Poor in March. Fair to good during April and May. Favorable conditions occur 45 percent of the time in March, 60-75 percent in April and May.

7. ASTRONOMICAL DATA. Moscow, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0646	0526	0419
Last Light	1832	1934	2033

(Prepared: 10 June 1981)

JUNE - AUGUST

1. GENERAL. Summer weather is warmer, less humid, and less cloudy than other seasons. Mean maximum temperatures are in the high 60's (F) to low 70's. Mean minimum temperatures are in the 50's. Mean cloudiness is 50-60 percent. Precipitation, mostly as rain showers, falls on up to 15 days per month, averaging 2-4 inches per month. Thunderstorms occur frequently (up to 10 days per month) in June and July, but become less frequent (3 days per month or less) in August.

2. FLYING WEATHER. Fair to good. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 30-40 percent of the time; less than 1500/3, 20 percent; and less than 500/1, 10 percent. Thunderstorms occur frequently in June and July (up to 10 days per month), but only occasionally (3 days per month or less) in August.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occurs less than 15 percent of the time.

4. TERMINAL WEATHER. Moscow, USSR. Fair to good. Ceiling/visibility less than 300/1 occurs up to 3 percent of the time. Thunderstorms or rain showers occur on as many as 8 days per month in June and July, but only 2 days per month or less in August.

5. EXPOSURE WEATHER. Frequent rain showers and thunderstorms are the only significant problem during this season.

<u>MOSCOW, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
<u>TEMPERATURE (F)</u>			
Absolute Maximum	90	91	91
Mean Maximum	72	74	71
Mean Minimum	53	57	55
Absolute Minimum	37	45	32
<u>MEAN PRECIPITATION (INCHES)</u>	2.0	3.5	3.0
<u>MEAN NUMBER OF DAYS</u>			
Precipitation	8	11	11
Thunderstorms	8	7	2

6. PARADROP WEATHER. Fair to good. Favorable conditions occur 60-75 percent of the time. The main causes of unfavorable weather are precipitation and ceilings less than 1500 feet.

7. ASTRONOMICAL DATA. Moscow, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0344	0405	0500
Last Light	2115	2104	2006

(Prepared: 10 December 1980)

SEPTEMBER - NOVEMBER

1. GENERAL. The weather becomes increasingly cold, wet, and cloudy as the autumn season progresses. Mean maximum temperatures, in the mid 50's (F) to low 60's in September, reach only the high 20's to low 30's in November. Mean minimum temperatures fall from the 40's in September to the low 20's by November. The frequency of precipitation increases. Precipitation becomes predominately

snow by November. Mean cloudiness increases from approximately 50 percent in September to about 80 percent in November.

2. FLYING WEATHER. Poor. Broken to overcast skies are the norm. Ceiling/visibility less than 5000 feet and/or 6 miles occurs as often as 70 percent of the time; less than 1500/3, up to 40 percent; and less than 500/1, up to 20 percent of the time.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility of 3 miles or greater occur less than 10 days per month.

4. TERMINAL WEATHER. Moscow, USSR. Very poor. Ceiling/visibility less than 300/1 occurs up to 15 percent of the time in September and October and as often as 35 percent of the time during November.

5. EXPOSURE WEATHER. By the latter half of the season, precipitation falls mainly as snow and temperatures remain below freezing throughout the day.

<u>MOSCOW, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Maximum	89	72	57
Mean Maximum	56	44	29
Mean Minimum	42	33	22
Absolute Minimum	23	-1	-9
MEAN PRECIPITATION (INCHES)	2.4	2.5	1.8
MEAN NUMBER OF DAYS			
Precipitation	11	13	14
Snowfall	1	5	14
Thunderstorms	1	*	0

* = less than 0.5 day

6. PARADROP WEATHER. Fair. The chances for successful paradrop operations are favorable about 45 percent of the time in September and October, but only 25 percent or less in November.

7. ASTRONOMICAL DATA. Moscow, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0600	0659	0803
Last Light	1848	1731	1623

(Prepared: 18 March 1982)

SITUATION CLIMATIC BRIEF
UNION OF SOVIET SOCIALIST REPUBLICS
WESTERN STEPPES

DECEMBER - FEBRUARY

1. GENERAL: Winters are very cold and cloudy with frequent light snow. Mean daily maximum temperatures range from 5F to 15F. Mean daily minimum temperatures are -15F to -5F. Mean cloudiness is 40-60 percent. Snow falls on 5-15 days per month, but monthly precipitation totals are less than 1 inch. Gale force winds (28 knots or greater) occur on 1-4 days per month. Thunderstorms are rare.

2. FLYING WEATHER. Fair. Winter cloud cover is mostly consists of low, flat cloud layers, which seldom extend above 10,000 feet. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-60 percent of the time; less than 1500/3, 20-40 percent; and less than 500/1, 10 percent or less. Aircraft icing and turbulence are common at the lower levels.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on less than 15 days per month.

4. TERMINAL WEATHER. Omsk, USSR. Fair. Ceiling and visibilities are usually adequate for most flying operations, however frequent snowfall and low temperatures make icy runway conditions likely. Ceiling/visibility less than 300/1 occurs about 5 percent of the time.

5. EXPOSURE WEATHER. Very cold temperatures and frequent snowfall can impact the ability of personnel and equipment to function outdoors effectively. Wind chill can be very severe.

<u>OMSK, USSR</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
TEMPERATURE (F)			
Absolute Maximum	37	39	41
Mean Maximum	10	5	9
Mean Minimum	-6	-11	-9
Absolute Minimum	-53	-53	-56
MEAN PRECIPITATION (INCHES)	0.8	0.5	0.4
MEAN NUMBER OF DAYS			
Snowfall	10	7	6
Thunderstorms	0	0	0

6. PARADROP WEATHER. Fair. Conditions are favorable about 40 percent of the time.

7. ASTRONOMICAL DATA. Omsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>
First Light	0739	0740	0653
Last Light	1623	1652	1750

(Prepared: 18 March 1982)

MARCH - MAY

1. GENERAL. Spring is cloudy and cold with increasingly frequent precipitation. Mean cloudiness is 55-75 percent. Mean daily maximum temperatures increase from the 20's (F) during March to the 50's and 60's (F) during May. Mean daily minimum temperatures, near zero in March, rise to the 30's (F) by May. Precipitation falls on 10-15 days per month. As the season progresses precipitation changes from snow to rain, and monthly precipitation totals increase from about 0.5 inches in March to 1.5-2 inches in May. Gale force winds (28 knots or greater) occur on 3 days or less per month. Thunderstorms are rare in March and April, but occur on up to 3 days in May.

2. FLYING WEATHER. Fair. Persistent cloud cover is the chief obstacle to flying operations during this season. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-70 percent of the time; less than 1500/3, 10-35 percent; less than 500/1, 1-8 percent. Turbulence and icing are frequently encountered in the lower levels.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on less than 10 days per month.

4. TERMINAL WEATHER. Omsk, USSR. Fair. Ceilings and visibility are usually adequate for flying operations. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. Precipitation occurs frequently, but is usually light and of short duration. Icy runway conditions are likely through mid-May. Runway crosswinds exceed 15 knots about 5 percent of the time. Low-level icing is a frequent hazard.

5. EXPOSURE WEATHER. Very cold temperatures early in the season make the potential for severe equivalent wind chill temperatures very high. Temperatures moderate as the season progresses. Frequent precipitation can impact outdoor operations throughout the season.

<u>OMSK, USSR</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
TEMPERATURE (F)			
Absolute Maximum	57	84	95
Mean Maximum	20	44	64
Mean Minimum	1	26	40
Absolute Minimum	-45	-17	9
MEAN PRECIPITATION (INCHES)	0.4	0.6	0.9
MEAN NUMBER OF DAYS			
Precipitation	7	6	10
Snowfall	5	4	2
Thunderstorms	0	1	4

6. PARADROP WEATHER. Poor. Persistent cloud cover and frequent showers and thunderstorms impact paradrop operations. Conditions are favorable less than 40 percent of the time.

7. ASTRONOMICAL DATA. Omsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>
First Light	0547	0424	0311
Last Light	1845	1948	2054

(Prepared: 19 March 1982)

JUNE - AUGUST

1. GENERAL. Summer is cloudy and mild with frequent showers and thunderstorms. Mean cloudiness is 55-75 percent. Mean daily maximum temperatures are in the high 50's to mid-60's (F). Mean daily minimum temperatures range from 45F to 55F. Rain showers can be expected on 10-15 days each month, with mean monthly amounts of 2-3 inches. Gale force winds (28 knots or greater) occur on 1-2 days per month. Thunderstorms occur on 4-8 days per month.

2. FLYING WEATHER. Fair. Flying operations are hindered by frequent and persistent cloud cover and frequent showers and thunderstorms. Ceiling/visibility less than 5000 feet and/or 6 miles occur 40-70 percent of the time; less than 1500/3, 15-40 percent; and less than 500/1, 2-8 percent. Low-level turbulence is a frequent hazard during this season.

3. RECONNAISSANCE WEATHER. Fair. Sky cover of 2/8 or less and visibility 3 miles or greater occurs on 10-15 days per month.

4. TERMINAL WEATHER. Omsk, USSR. Fair. The weather is cloudy with frequent showers and thunderstorms. Ceiling/visibility less than 300/1 occurs about 5 percent of the time. Runway crosswinds greater than 15 knots, with associated low-level turbulence, occur about 2 percent of the time.

5. EXPOSURE WEATHER. Temperatures are fairly mild, but frequent showers and thunderstorms and occasional gusty winds may impact outdoor activities.

<u>OMSK, USSR</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
TEMPERATURE (F)			
Absolute Maximum	104	104	99
Mean Maximum	74	76	72
Mean Minimum	50	54	50
Absolute Minimum	28	36	28
MEAN PRECIPITATION (INCHES)	1.6	2.1	1.8
MEAN NUMBER OF DAYS			
Precipitation	2.2	2.8	2.1
Thunderstorms	6	9	5

6. PARADROP WEATHER. Poor. Persistent cloud cover and frequent showers and thunderstorms impact paradrop operations. Conditions are favorable less than 40 percent of the time.

7. ASTRONOMICAL DATA. Omsk, USSR. (Date as of the 15th/local standard time)

<u>CIVIL TWILIGHT</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>
First Light	0229	0256	0400
Last Light	2144	2129	2023

(Prepared: 19 March 1982)

SEPTEMBER - NOVEMBER

1. GENERAL. Autumn temperatures turn distinctly colder under mostly cloudy skies. Mean cloudiness is 50-75 percent. Daily temperatures decrease rapidly as the season progresses; mean maximums of 50F to 70F in September fall to the -5F to +35F range in November. Similarly, mean daily minimum temperatures

decrease from 35-45F in September to the -15 to +20F range in November. Precipitation is frequent, but light, and occurs on an average of 10-18 days per month with monthly totals of 2 inches or less. Snowfall can be expected as early as October and continues through the season. Gale force winds (28 knots or greater) occur on 3 days or less. Thunderstorms are rare.

2. FLYING WEATHER. Fair. Low-level cloud cover is the chief obstacle to flying operations during this season. Ceiling/visibility less than 5000 feet and/or 6 miles occurs 40-70 percent of the time; less than 1500/3, 15-30 percent; and less than 500/1, 2-8 percent. Low temperatures and frequent precipitation make icy runways likely during the latter half of the season. Icing and turbulence are frequent hazards at the lower levels.

3. RECONNAISSANCE WEATHER. Poor. Sky cover of 2/8 or less and visibility 3 miles or greater occur on 10 days per month or less.

4. TERMINAL WEATHER. Omsk, USSR. Fair. Although frequently cloudy, ceilings and visibilities are usually adequate for most flying operations. Ceiling/visibility less than 300/1 occurs less than 5 percent of the time. Surface winds exceed 28 knots on 1-3 days per month. Icy runway conditions are likely during the latter half of the season.

5. EXPOSURE WEATHER. Temperatures become cold by late November. Wind chill can be severe during the latter half of the season.

<u>OMSK, USSR</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
TEMPERATURE (F)			
Absolute Minimum	90	75	69
Mean Maximum	62	43	23
Mean Minimum	41	28	10
Absolute Minimum	18	-18	-42
MEAN PRECIPITATION (INCHES)	0.8	0.8	0.8
MEAN NUMBER OF DAYS			
Precipitation	11	12	12
Snowfall	*	6	7
Thunderstorms	3	0	*

* - less than 0.5 day

6. PARADROP WEATHER. Poor. Favorable conditions occur 20-40 percent of the time.

7. ASTRONOMICAL DATA. Omsk, USSR. (Data as of the 15th/Local standard time)

<u>CIVIL TWILIGHT</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>
First Light	0501	0558	0156
Last Light	1902	1746	1646

* U.S. GOVERNMENT PRINTING OFFICE: 1967-0-551-125